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THE ZOOLOGIST:

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OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CLXXVI.

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JOHN VAN VOORST, PATERNOSTER ROW.

Price ONE SHILLING.

TO CORRESPONDENTS.

Dr. Knox's paper intituled "Zoology: its present Phasis and future Prospects has induced a voluminous correspondence; the writers, without exception, expressin disapprobation of the tone and tenor of the author's remarks. To none can th paper be less acceptable than myself: it is opposed to all my views: but th difference between Dr. Knox and myself, in matters of opinion, does not weigh wit me so much as the intolerant spirit in which they are discussed. Trusting entirely Dr. Knox's well-earned reputation as a zoologist, I trusted also to his judgment confining himself to the subject of his paper, as implied in the title: the auth corrected the paper for press, and it was not until some of the criticisms came to han that I carefully read the paper to which they referred. I then found that politics an polemics were introduced in a manner against which I have always determined to s my face. Such subjects are entirely foreign to the object for which the 'Zoologis was establised and for which it is purchased: if authors will select them for elucid tion they must find other channels for the result of their labours,

Mr. Bree's paper (Zool. 5372) has also been strongly, and as I think unreaso ably, objected to by numerous Lepidopterists: Mr. Wailes' communication, written a pleasant and inoffensive tone (Zool. 5541 of the present number), conveys the groun of objection generally urged. In reply, I may state that this is the first scienti communication I have seen from the pen of Mr. Bree; and I must decline publishi criticisms that are so evidently written in an unfriendly spirit.

In both instances I must repudiate the responsibility which readers seek to lay my shoulders: had Dr. Knox's paper contained highly orthodox sentiments, Mr. Bree's valuable scientific information, would the present objectors have given the credit? I think not.

EDWARD NEWMAN.

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London: LONGMAN, BROWN, GREEN, LONGMANS and ROBERTS.

January 26, 1857.—W. W. Saunders, Esq., F.R.S., President, in the chair.

The 23rd Anniversary Meeting was held on the 26th inst., at the rooms of the Society, 12, Bedford Row.

Messrs. J. E. Gray, F. Grut, F. P. Pascoe, and T. V. Wollaston, were elected members of the Council, in the room of Messrs. J. Curtis, J. W. Douglas, F. Smith, and J. O. Westwood. W. W. Saunders, Esq., F.R.S., &c., was re-elected President; S. Stevens, Esq., F.L.S., Treasurer; and Messrs. E. Shepherd and E. W. Janson, Secretaries.

The Report of the Council for the year 1856 was read and received; the abstract of the Treasurer's accounts, as furnished by the auditors, showed a larger balance in hand than on any former anniversary.

The President delivered an Address on the affairs of the Society and the progress of Entomology, for which, and his courteous conduct in the chair, and on all other occasions, the Meeting passed a cordial vote of thanks, with a request that he would allow the Address to be printed.

Votes of thanks were also passed to the Treasurer and Secretaries, and the retiring Members of Council.

Part 3 of Vol. iv., n. s., of the Society's 'Transactions' was on the table.

February 2, 1857.—H. T. Stainton, Esq., V.P., in the chair.

The Secretary read a letter from the President of the Society, W. Wilson Saunders, Esq. (who was absent through indisposition), in which he nominated as Vice-Presidents for the year Dr. J. E. Gray, H. T. Stainton, Esq., and T. V. Wollaston, Esq.

Donations.

The following donations were announced, and thanks ordered to be given to the donors:—'Memoirs of the Royal Academy of Sciences of Madrid,' Natural Sciences, Tome ii. Part I.; Physical Sciences, Tome i. Part I.; presented by the Academy. 'Exotic Butterflies,' Part XXI.; by W. W. Saunders, Esq., F.R.S. 'Proceedings of the Zoological Society,' Nos. 310—313 inclusive; by the Society. 'Monograph of the Genus Catops,' by Andrew Murray, Member of the Royal Physical Society of Edinburgh, &c.; by the Author. 'The Natural History Review,' 1857, No. 1; by the Dublin University Zoological Association. 'Bibliotheca Historico-Naturalis,' Vol. v. Part II.; by the Editor, Herr Ernst A. Zuckold. 'List of the Specimens of Lepidopterous Insects in the Collection of the British Museum,' by Francis Walker, Esq., F.L.S., Part X. Noctuidæ; by the Author. 'The Zoologist' for February; by the Editor. 'The Literary Gazette' for January; by the Editor. 'The Journal of the Society of Arts' for January; by the Society. 'A Manual of British Butterflies and Moths, No. 12; 'Elements of Entomology,' No. 5; 'The Substitute,' Nos. 12—15; by H. T. Stainton, Esq.

Election of a Subscriber.

C. J. Biggs, Esq., of Blenheim Cottages, South Hackney, was balloted for and elected a Subscriber to the Society.

BRITISH MUSEUM

Exhibitions.

Mr. Stevens exhibited some beautiful Lepidoptera, which had lately arrived in this country, taken by Mr. Bates in the Upper Amazons; and observed that although the box containing them had been despatched by Mr. Bates in July last, from Ega, more than 1500 miles from the mouth of the Amazon, yet the insects were in the most excellent condition. Of these he called attention to Callithea Batesii, and to a splendid undescribed species, closely resembling it in colour and markings, but presenting a striking difference in the form of the club of the antennæ; also to the extraordinary dissimilarity in the sexes of a beautiful species of Epicalia, and to a fine female Agrias, probably the female of A. Phalcidon, *Hewitson*. In the box were also a fine series of Erycinidæ, and some remarkable species of Tortrices and Tineæ, being the first specimens of these two last-named families which have reached this country from that far-distant locality.

Mr. Janson exhibited specimens of Bledius unicornis, *Germar*, from the collections of Messrs. Parfitt and Wollaston, and read the following notes.

"I beg to exhibit Bledius hispidus, *Parfitt* (Zool. 5409), the pair from which Mr. Parfitt drew up his description, and which he has obligingly transmitted me for examination. This is the insect alluded to by Mr. Westwood at the October Meeting of the Society; and I must express my regret and surprise that the information supplied by Mr. Westwood should have induced Mr. Parfitt to describe it as a new species, when it has been well figured, some thirty years since, by Germar in 'Fauna Insectorum Europæ,' fas. xii. tab. 3, and unmistakeably described by Dr. Erichson in his 'Genera et Species Staphylinorum,' both of which standard works doubtless grace the shelves of Mr. Westwood's splendid entomological library. Complaint is frequently made that the entomologists of this country, satisfied with determining their insects from named collections, never or seldom refer to books, and that thus error is perpetuated. But if those occupying the foremost rank in our Science, with every facility at their command, evince such manifest disinclination to consult books, what can be expected of those who are deprived of these facilities? I would enjoin, at all events, those who, prefixing an asterisk to their names in the authorized 'List of Entomologists,' proclaim themselves teachers, to bear steadfastly in mind the hackneyed adage, 'Example is better than precept.'

"I may perhaps be permitted to adduce the present insect as a proof of the disinclination to furnish, if not actual disposition to conceal, that information which all must be very well aware is of primary importance to the successful accomplishment of the task which I have undertaken, of drawing up a Synonymic List of the British Coleoptera, and which, I regret to state, has been most unmistakeably evinced by those who were most clamorous for the publication of that List, the most invective at the delay in its appearance, and, above all, by those who had promised me their hearty and unreserved co-operation, for which I pledged myself they should have at least the full share of credit, and, failing which, I should certainly not have entered on that arduous, and, I must admit, now odious, task. Of the insect now exhibited Mr. Parfitt captured five individuals, of which he presented three to London entomologists; yet when preparing my notice of new species for this year's 'Annual' I was unable to ascertain anything relative to the 'new British Bledius;' and had not Mr. Parfitt consented to commit his only pair (and which, as the types of his description, were very valuable to him) to the ruthless custody of the post office, I should not even now have been able to bring under your notice the following illustration of the fate which appears to be the almost inevitable attendant on the ascertained indigenousness of a species, namely, condemnation to trail evermore behind it an unsightly, trouble-giving train of synonyms. The nomenclature of the present insect will now stand thus:—

Bledius unicornis, *Germar*, *Erichson*, *Gen. et Spec. Staph.* vii. 764, 7 (1840).
Oxytelus unicornis, *Germar*, *Fauna Insect. Europ.* fas. xii. f. 3 (1828).
Bledius hispidus, *Parfitt*, *Zoologist*, 5409 (1857).
Bledius cornutus, *F. Smith*, *in litteris.*

Hence it is seen that a species universally recognised abroad during upwards of a quarter of a century, well figured and admirably described, is no sooner found in Britain than, in a few short weeks, it is shackled with two synonyms,—a fact which certainly reflects no credit on the entomologists of this country, and which cannot tend to augment the respect of our continental brethren, or to raise Entomology from the low level in the scale of the Sciences which she is doubtless doomed to occupy until her votaries consent to devote some share of that shrewdness and zeal which they so conspicuously manifest in the acquisition of specimens to the arrival at and adoption of a correct and legitimate nomenclature, and the higher objects to which collections should be subservient, and to which this is assuredly the true prelude. In conclusion, I will observe that Bledius unicornis was captured by Mr. Wollaston at the Chesil Bank and Exmouth Warrens several years back, and that I long since thus designated the specimens in that gentleman's collection."

Read the following, by Mr. Newman:—

Note on Pairs of Species of British Lepidoptera which are Heterocampous and Isomyious.

"I have endeavoured to prove that Nature has a tendency to assimilate, in the external characters of the adult, certain beings, which, in the earlier, or, as we may express it, preparatory stages of their existence, have little or no apparent similarity to each other. Such assimilations, when they do occur, are always in pairs, and familiar examples will occur to every one in the placental and marsupial sucklers, the hesthogenous and gymnogenous birds, the metamorphotic and immutable reptiles, the viviparous and spawning fishes. Descending from larger to smaller groups, we find such pairs becoming still more pronounced, and the supposed law or principle still more strikingly exhibited. It has occurred to me that such a law or principle cannot be partial: if it exist in Nature it must be general, and must descend even to species. After a moment's reflection it struck me, further, that the European, and perhaps even the British, Lepidoptera might afford a ready means of testing the value of my theory. I argued to myself that if such pairs existed in Europe they must be known to a Guenée; if in Britain they must be familiar to a Doubleday, a Shepherd or a Douglas. Both on the Continent and in Britain, Lepidoptera have been studied with a perseverance and a success that has far outstripped the results arising from attention to any other insects; bees, ichneumons, Brachelytra, Rhynchophora, although the objects of especial research, are literally unknown in comparison with our indigenous Lepidoptera, and this principally because Lepidoptera are studied in all their stages, the others only in one: the study of Macro-Lepidoptera has become deeply philosophical; that of other insects at present remains comparatively superficial. Hence I can only appeal to the lepidopterist: the general (another term for the superficial) entomologist cannot comprehend my drift. Let a lepidopterist open his breeding-cages, and exhibit to a general entomologist the larvæ of Acronycta Psi and A. tridens (to him 'familiar as household words'), of Calocampa vetusta and C. exoleta; and let the lepidopterist tell the entomologist that these four larvæ produce two pairs of moths, of which the individuals composing each pair are so similar that he (the entomologist), with all his knowledge, with all his book-learning, could not distinguish between them; that it required the utmost subtlety in the eye of the lepidopterist himself to distinguish them, and defied the powers of his pen to differentiate them: the entomologist would simply exhort the lepidopterist to greater care in his observations, and caution him against adopting theories which could not be supported by an appeal to Nature; the entomologist, in the most friendly spirit, would point out the differences of form and structure in the larvæ; would probably select Psi and tridens; would call the lepidopterist's particular attention to the dorsal column on the larva of Psi, absent altogether from tridens; and, indulging benignantly in improving platitudes about general principles, affinity and analogy, extended range of observations, and so forth, would probably leave the bewildered lepidopterist under the idea that there was something, some unknown property, in Science that entirely superseded truth and fact, and that was far beyond the reach of his limited capacity. To go a step further, if the lepidopterist pertinaciously adhered to the truth, and exhibited the perfect insects of Psi and tridens, then the entomologist would infallibly turn on his heel, 'more in sorrow than in anger,' and leave the lepidopterist in his error, convinced that it was useless to argue with one whose ignorance was so 'crass.' In all this the lepidopterist is right; he has assiduously worked mines of knowledge, the very existence of which are unknown to the entomologist. Even in our British Lepidoptera there are numbers of pairs which require the most highly educated eye to separate them correctly. Let the inquiry be instituted; and from this inquiry must be eliminated *in toto* all questionable species, all instances of abnormal form and colour; all seasonal, climatal, altitudinal, latitudinal, geographical, geological or other acknowledged sources of variation; all second generations in the same year: those natural witnesses only should be examined which, living on the same spots, at the same time, and under the same conditions, originate from different eggs, differ totally in the larva, and approach almost to identity in the imago. I think it is absolutely impossible to examine a rich collection of British Lepidoptera without being struck with the constant recurrence of such pairs. I will cite a few examples.

Argynnis Adippe and A. Aglaia
Argynnis Selene and A. Euphrosyne
Sesia bombyliformis and S. fuciformis
Anthrocera Loniceræ and A. Trifolii
Procris Statices and P. Globulariæ
Lithosia complana and L. complanula
Porthesia auriflua and P. chrysorrhœa
Clisiocampa neustria and C. castrensis
Notodonta dictæa and N. dictæoides
Acronycta Psi and A. tridens
Caradrina blanda and C. Alsines
Tæniocampa Populeti and T. instabilis
Glæa Vaccinii and G. spadicea
Dianthecia capsincola and D. Cucubali
Xylina petrificata and X. semibrunnea
Calocampa exoleta and C. vetusta
Cucullia Scrophulariæ and C. Lychnitis
Catocala promissa and C. sponsa
Brephos Parthenias and B. notha
Tephrosia crepuscularia and T. laricaria
Ypsipetes ruberaria and Y. impluviaria
Cheimatobia dilutaria and C. autumnaria

I have a list of seventy-four other pairs; but these are sufficient for my purpose, and

I think it will be difficult to explain away their teaching. I have already anticipated some objections: I will allude to others. It is said, in the instance of Psi and tridens, that on the North-American continent four, that is two pairs, of Acronyctæ exist which approach our British ones so closely that a complete series is thus established; there is also a solitary European species, cuspis, which seems to be allied to all the others. These facts do not appear to me to militate against the view I have taken of the prevalence of pairs: perhaps one of the North-American pairs may be identical with our Psi and tridens, and the other pair quite distinct; but I learn that no pains have been yet taken to distinguish the larvæ of these species: the continental cuspis standing somewhat isolated is no objection, as I do not say that all species are associated in pairs, but only that some are so. Again, I cannot admit the doctrine of chance, that the correspondence between two species is a mere matter of accident. Finally, to the question of the general entomologist, 'Are these pairs really composed of two distinct species?' I reply that this is established beyond all question by the difference of the larvæ."

Mr. Stainton observed that this theory of pairs would be completely upset if the list were extended to European Lepidoptera, as there would be found in many instances Continental species quite as closely allied to the pairs mentioned as these British species are to each other.

Mr. Westwood said that he had heard, for the first time, a theory proposed, capable, as was asserted, of being tested by the productions of a limited geographical range like Great Britain. He had supposed it to be generally admitted that a knowledge both of existing and extinct forms was requisite for the proposition of natural laws. Was it intended that in each country throughout the world these double species should occur? Was it only in the Lepidoptera they were to be looked for? Was it intended that each species should be thus divided, as it were, into two sub-species? Moreover, in the instances cited, it was evident Mr. Newman had adduced relations of analogy, supposing them those of affinity. No one could support such a theory. Was it intended that each species should be attended by another species intimately allied to it? No one ever doubted such a principle. In the opening part of his paper Mr. Newman had alluded to the binary divisions of the highest groups, such as Vertebrata and Invertebrata, Ptilota and Aptera, &c.; but in the latter part he had confused these relations (vague as they often were) with the closest possible affinity that could exist in Nature, exclusive, of course, of that between individuals of the same species.

Mr. Lubbock considered that binary divisions in classification resulted from the convenience arising to classifiers, and not from any law of Nature, and that the "pairs" mentioned by Mr. Newman could only prove that each species has some one other species more nearly allied to it than are the rest of its congeners.

New Crimean Carabus.

Mr. Douglas read the following paper, intituled 'Characters of an apparently undescribed Crimean Carabus, taken by Lieutenant Thomas Blakiston, of the Royal Artillery; by Mr. Newman:'—

"CARABUS BLAKISTONI, *Newman.*

"*Niger, prothoracis elytrorumque marginibus chalybeo-purpureis: prothorax fere quadratus, lateribus subconvexis paullo dilatatis, paullo reflexis, marginibus antico et postico excavatis, angulis posticis paullo productis, dorso scabro inæ-*

quali : scutellum reconditum : elytris latis, amplis, convexis, utroque 13striato, spatioque laterali intus marginem reflexum scabro, striis profunde punctis, interspatiis elevatis carinæformibus, 3tio, 7mo, 11moque foveis nonnullis magnis interruptis. (Corp. long. 1·2 unc. elytrorum lat ·55 unc.)

"Colour black, slightly shining, with a steel-blue tint in the furrow, caused by the reflexed margin of prothorax and elytra. The prothorax is almost square, the lateral margins slightly convex, slightly dilated and slightly reflexed, the anterior margin concave, its angles rounded, the posterior margin also concave, each of its angles produced into an obtuse tooth. Scutellum hidden. Elytra ample, convex, each with 13 deeply and regularly punctured striæ, the interspaces distinct, elevated and shining: they are entire, with the exception of the 3rd, 7th and 11th, counting from the suture, and each of these is interrupted by 7 or 8 large deep foveæ.

"Taken in the Crimea, by Lieutenant Thomas Blakiston, of the Royal Artillery, an officer whose exertions in the cause of Natural History are above all praise, and whose admirable papers on the birds of the Crimea are now in course of publication in the 'Zoologist.' The specimens will be placed in the cabinet of the British Museum, with the fine series of Russian Carabi, with which they have been already carefully compared."

Mr. Waterhouse hoped this insect had been very carefully compared with closely allied species, to ascertain if really new, before venturing to describe it under a new name. He considered such descriptions no advancement to Science.

Mr. Wollaston observed that some time since he had discovered, by a mere accident, that black lacquered pins would not corrode when used to pin insects liable to grease, and that Mr. Bond had also used them with an equally satisfactory result. Mr. Baly had received some ants from Vienna impaled with varnished pins; none of these had corroded, although, as was well known, no insects were more likely to cause corrosion than ants.

Mr. Stainton remarked that lacquered pins had for some time past been in very general use in Germany, and, he believed, were found to answer the desired end.

Mr. Westwood made some observations on mouldiness in insects, and referred to a communication, read at a Meeting of the Society a few years back, on the difficulty or impossibility of preserving entomological specimens in some parts of North America, owing, as was alleged, to everything preserved in closely shut receptacles becoming covered with mould during certain states of the atmosphere. In contradiction of this statement Mr. Westwood observed that the North-American insects collected by Dr. Abbott reached this country in most admirable order.

Mr. Wollaston said he could not keep insects in Madeira shut up in boxes, even for a month, without becoming covered with mould; nothing would prevent it but constant exposure to the air. He believed this was more likely to occur in small islands than far inland.

Mr. Walker read a paper entitled 'Characters of undescribed Diptera in the Collection of W. W. Saunders, Esq.'—*E. S.*

NORTHERN ENTOMOLOGICAL SOCIETY.

January 10, 1857.—B. COOKE, Esq., President, in the chair.

Election of Members.

Mr. Thos. Hague, of Stalybridge, and Edwin Birchall, Esq., of Dublin, were duly elected Members of the Society. Jno. Curtis, Esq., of Barnsbury Park, London, was unanimously elected an Honorary Member of the Society, with the same privileges of voting, &c., as any other Member.

Exhibitions, &c.

Mr. N. Cooke exhibited a box of insects sent by E. Birchall, in which was a fine specimen of Apamea fibrosa, *Engr.*, var.? leucostigma, *Hub.*, taken near Killarney, Ireland, and a species of the genus Homæosoma, unknown to the Meeting, taken in Dublin.

Mr. Warington sent a box in which were a series of extraordinarily fine specimens of Eupithecia succenturearia and Gelechia Hermanella, also a series of Gelechia fraternella, all taken at Tranmere.

Mr. Greening exhibited Noctua ditrapezium, which he had received from Mr. Bond, and Eupithecia pimpinellaria, from Mr. Edwin Shepherd. Both these insects had been kindly presented to him by the above gentlemen.

Mr. Carter exhibited a most interesting box of foreign Coleoptera, all the specimens in which had nevertheless been bred or captured in England, and asked the question, "Are these British?" The reply was, any insect which naturalizes itself and regularly reproduces its species, let it first come from where it may, is and must be considered British; unless it does this, however many specimens may be taken or bred, they must only be placed in foreign collections. The following specimens are the most interesting insects in the box:—

Ptychodes trilineatus. A native of North America. One taken at Manchester.

Plectodera vittator. Campeachy. Three taken at Manchester, one at Barnsley.

Tæniotes scalaris. Brazil. One taken at Manchester.

Acanthocinus nodosus. North America. One taken at Manchester.

Callidium ——? Unknown. One taken at Manchester.

Acrocinus longimanus. Brazil. One taken at Liverpool.

Clytus terminans. North America. Liverpool, and at Oldham; many taken.

Elaphidion spinicorne. West Indies. Two taken at Manchester.

Monohammus dentator. This insect is supposed to have naturalized itself near Manchester, so many having been taken; but until the larva is found in growing timber it must remain doubtful. It has also been captured at Warrington and at Birkenhead.

The whole of these beautiful Longicorns were from Mr. Carter's magnificent collection of foreign Coleoptera.

The Secretary exhibited specimens of Anthrocera Autumnaræ, *Gregson*, taken by Mr. Almond, near Park Gate, Cheshire, last August; and read a description of this distinct six-spot Burnet. He also exhibited a box of Coleoptera, a variety of A. Caja remarkable for the broad dark band across the upper wings, and specimens of Coleophora solitariella recently received from Mr. Shield. He then submitted a sketch intended for the Society's diploma, if approved by the Meeting; it was unanimously decided to accept the design.

Several letters were read from gentlemen who had been elected Honorary Members, thanking the Society for the highly prized honour it had conferred upon them.

The paper of the evening, 'Is Acronycta Salicis a distinct Species?' was read by Mr. N. Cooke. (For this paper see the Society's 'Transactions' for 1856—7, now in the press).

The President announced the death of an esteemed Honorary Member of the Society, David Dyson, the Central American traveller, and called upon the Secretary to read a short memoir of his early life; also a letter which appeared in the 'Liverpool Mercury' of December 31, 1856, entitled "Honour to whom honour is due" (signed C. S. Gregson), animadverting upon the neglect of such great men as Dyson by our learned and Natural History Societies; also a letter, in the same paper of January 3, 1857, entitled "Lancashire men of Science in humble life," which it was supposed was intended as a reply to the above. The Meeting could not understand the writer, who signed himself "An Old Naturalist." Several Members requested Mr. Gregson to reply to the letter; but that gentleman declined noticing the attacks of an anonymous writer.

Dallas's 'Elements of Entomology,' which was on the table, seemed to give general satisfaction; whilst 'A Manual of British Butterflies and Moths' was rather roughly handled, especially for its want of synonyms.—*C. S. G.*

Note on a Shark taken near the Land's End.—I observe in the January number of the 'Zoologist' a notice on the white shark "cast up at Herm," in which is expressed a very reasonable doubt whether that fish is fully recognised as British: I am quite aware that my valued friend the late Mr. Yarrell always entertained an objection to admitting it into his work, because the evidence laid before him was not sufficient to convince him of the species; but he was always aware of the existence of a shark in our seas, which either was the white shark or altogether a new one: while he was preparing for the second edition of his valuable work, I again tried to get him to assert positively that it had been captured, but he was reluctant to do so, and, up to a short time before his death, he still continued to doubt the authenticity of the specimens mentioned. But, within the last three years, I have had an opportunity of examining several specimens, two of which were taken at Whitsand Bay, Land's End, and one in Mount's Bay; and, besides these, I have seen others moving about in the same localities: one, at the Land's End, measured rather more than 19 feet, was a stout and powerful fish, and is well represented by Yarrell's figure: it is quite unnecessary to enter into a description of it, unless it should be required for a third edition of the 'British Fishes,' when this, besides three others, would form an addition to our Fauna. I enclose you a figure of one which Mr. Yarrell saw, and which, from its shape, he was inclined to think might be a variety of the blue shark (*Carcharias glaucus*). But last summer I had an opportunity of examining two specimens captured in Mount's Bay at the same time when many scores of the blue shark were also thrown on the beach, so that I had an excellent opportunity for comparison, of which I did not fail to take advantage: the general figure and appearance of both are very much alike, but the colour is altogether different; in the blue shark, as its name implies, it is of deep blue; in this, it is of a neutral tint inclining to gray, interspersed with red and flesh-colour; the eye is rather larger than in the blue shark, and nostril larger and rather below the level of the eye; the branchial orifices are much nearer the snout, and the pectoral fins are smaller, and also situated more anteriorly than in C. glaucus; the dorsal fin is smaller and not elongated posteriorly, and is also more anterior than in the blue shark; the tail is larger, stouter, and the posterior and terminal margin of the upper lobe is very much larger and more falcate than in its congener. This was considered both by my father and myself as probably the young of the white shark, and as such I submitted it to Mr. Yarrell, but, in conversation with him, too many differences were discovered to allow of such a supposition to be again entertained, and he then suggested its being a variety of the blue shark; but this, I think, must yield to the additional examination I have been able to give the subject, and I would venture to suggest the idea of its being new.—*R. Q. Couch; Penzance.*

Notice of the Fox or Thrasher Shark in Mount's Bay.—The occurrence of the fox shark (*Carcharius vulpes*) in Mount's Bay is so rare that a special notice of the fact is worthy of being recorded. This specimen, which is the only one I ever examined, was taken in a pilchard-net in the summer of 1855: it has, however, been captured in Cornwall on several occasions; Dr. Borlase mentions one, and another was taken at the entrance of the Looe river in 1826; the capture was effected in a drift-net, in which the specimen had got entangled, in the eager pursuit of the pilchard, on the last day of September. It does not appear to have been a strong fish, for no sooner was it entangled than it became powerless and was easily secured: the rent made in the net was not large, and even that seems to have been caused quite as much by the men trying to lift the fish in as by any other cause. The extreme length of the specimen from snout to tail was 12 feet, of which the tail was 6 feet 3 or 4 inches; from the snout to the origin of the dorsal fin was 2 feet 5 inches, to the pectoral 1 foot 5 inches; the snout was short, sharp and protruded; the eye was about 6 inches from it, and was perpendicularly oval, bright and large, the iris blue, and pupil an opaque green; the mouth was small, semilunar and apparently very feeble for aggression; the teeth were long, slender, moveable, and in three rows; the nostrils small and not lobed; the branchial orifices were five, and closely anterior to the pectoral fin, which was wide at the base, and about 20 inches long; immediately behind the pectoral fin was a large scale, forming a deep notch, which acted as a protection to the base of the fin; the ventral fin was large; it was a male, and had the large secondary sexual appendages; the length of the tail, or rather of the upper lobe of it, seemed very remarkable, being longer than the body of the fish; the general colour was a dull brownish blue, mottled inferiorly with brown; the abdomen was white, and this last extended from between the pectoral fins to the base of the tail; the smaller or inferior lobe of the tail is white and mottled with brown, and along the posterior margin of both lobes runs a thin, membranous and flexible fin; above and below the base of the tail there were deep depressions. This in its appearance seems to be one of the feeblest of the sharks, and this idea is fully confirmed by the weakness of the resistance it made when captured. It was observed about ten miles off the shore for several hours before it became entangled: it would frequently rise to the surface and occasionally splash with its tail, but would again dive below in pursuit apparently of small fish. In its stomach were eighteen common-sized pilchards, closely packed together. It was rolled up in the net, but both in taking it on board and after it was liberated its efforts at escape were very slight. Before being opened I took a water-colour drawing of it, half the size of life.—*Id.*

Skenea tricarinata not a Species.—I am indebted to the kindness of J. Gwyn Jeffreys, Esq., for permission to send to the 'Zoologist' the following extract from a letter, the result of an examination kindly undertaken by him of the small Skenea found by me at Falmouth, which I at first considered a new species, a short account of which appeared in the 'Zoologist' (Zool. 5205) a few months since, and a careful comparison of it with a specimen taken by himself in the Mediterranean, and also a series of the ordinary form of Skenea rota taken by me in a living state at the Land's End and other parts of the Cornish coast:—"The result of a careful comparison of these specimens induces me to retain the opinion I at first formed, that your Skenea tricarinata is only a variety of Skenea rota. Your species appears to differ from S. rota in its somewhat smaller size, in the whorls being flatter and more angular (the latter character being probably attributable to the greater prominence and distinctness of the ridges), and in the transverse ribs being less marked and not so nodulose as in the typical form. My specimens from the Mediterranean belong to this variety. All the specimens have these spiral ridges, one of them encircling the periphery and forming an obtuse keel, another on the upper side, and a third on the lower side in the centre of each whorl. The ridges are nearly equidistant from each other, and their direction is marked by a fulvous band: this character has not, I believe, been noticed by any one except yourself. I however give this opinion with some reservation, as I should have preferred to have an opportunity of comparing your specimens with others which I have myself collected from various parts of the British and Irish coasts; this unfortunately I cannot do at present, while I am divorced from my cabinets."—*W. Webster; Upton Hall, Birkenhead, February* 9, 1857.

[On receiving Mr. Webster's specimens I submitted them to Mr. Hanley, who instantly pronounced the same opinion, and intended to correspond with Mr. Webster on the subject.—*E. Newman.*]

A Schoolboy's Amusement in Southey's Days: a new way of proving the Specific difference of Helix nemoralis and H. hortensis.—I was greatly surprised to see a paragraph in the 'Zoologist' (Zool. 5431) with the above heading, for I had imagined that every schoolboy had played at "snail-fighting." I can answer for it, at any rate, that the practice was not confined to Southey's days, but is still a very prevalent one. The species I used to play with as a boy were mostly Helix nemoralis and H. hortensis, the same as Southey saw used, and sometimes H. aspersa. There are many conchologists, however, even some of the best in England, who would learn a lesson by playing at the same game. Let any of your readers who are, in my opinion, so mistaken as to espouse Forbes and Hanley's view, and consider Helix nemoralis and H. hortensis to be one and the same species, take to "snail-fighting," and they will find the error into which they had fallen; they will find that, in this respect, "unity is" not "strength," for that if they had thrown all the white-mouths away and kept the black ones, they would have ridded themselves of all those soldiers who were only "food for powder," and have kept a phalanx of invincible shell-guardsmen. I throw down my glove, and challenge any conchologist who believes in the unity of these two species to deadly combat,—my black-mouths (*H. nemoralis*) against his white-mouths

(*H. hortensis*),—and will give him odds of ten to one!—*Alfred Merle Norman; Kibworth, February* 3, 1857.

Remarks on Henslow's Swimming Crab (Polybius Henslowii).—This very singular crab has hitherto been considered very rare in the British seas, and its habits, if not altogether unknown, have at most been but little observed. Bell says it is very local in its distribution, and probably nowhere existing in great numbers. It was first discovered by Professor Henslow on the north coast of Devon in 1817, where it was captured in the nets employed in the herring fishery in the early autumn: from that time to the present a few have been taken both on the Devon and Cornish shores every year; on the Cornish coasts they are more numerous on the western than on the eastern shores: they are, however, comparatively much less common in the northern waters (extending from Hartland Point to St. Ives) than on the South, reaching from Plymouth Sound to the Land's End. But they are sometimes common, yet most frequently a few only are captured during a whole season of the pilchard fishery, which extends from June to September; but, from my notes relating to the captures of this species, I am inclined to think that their apparent rarity is, in a great measure, accidental, depending more on the localities in which the pilchard is taken than on the absence of the crab: I find, for instance, that when the boats fish near the shores or in the sheltered bays, my captures are rare, and during some seasons, when the pilchards are close to the shores, I have been unable to procure a single specimen, and in proportion as they go into deep water the captures are more common. But even when fishing in deep water the seasons are not equally productive, depending probably on the early or late character of the season, or the nature of the tides, and some years seem to be more prolific than others; but still they are always most abundantly found in deep water, and at considerable distances from the shores. In the years 1855 and 1856 the late summer fishery was carried on many miles from the shore in a south-western direction, in the waters of the Lionessa, between the Scilly Islands and the Land's End: from these localities I obtained great numbers every night; in fact, they became at last so abundant that they almost ceased to be interesting. In order, however, to ascertain the probable number taken, one young fisherman, who feels sufficiently interested in Natural History to bring me everything he considers rare, promised to secure for me the whole captured in his boat; this he did, and for about eighteen days I received from one hundred to one hundred and fifty every morning, and on two occasions the number amounted to more than four hundred. If this can be considered as the average capture of all the boats, the sea must have been swarming with them, for the boats of Mount's Bay engaged in deep-sea fishing are more than two hundred, and to these must be added the fleet from St. Ives, for to the west of the Land's End it is a common fishing-ground. I enquired of the crews of a great many boats whether they had taken any, and they all united in stating that they were so abundant as to injure the pilchard fishery. It is altogether a deep-water species, is very rarely indeed, if ever, found near the shore, and I have never seen it washed up after a storm, and only occasionally have I found it among the trawl refuse. Most of the specimens that I have examined have been captured, either by the hand as they swim at the surface or in the pilchard-nets at all depths from the surface of the ground. This is the most natatory of all our crabs, which might be expected to be the case, from the oar-shaped character of all the legs. The drift-net fishery allows the nets to drift with the tide as a floating wall, and these crabs are almost always captured on the eastern side, showing therefore that they are arrested in a westerly migration. I regret that we have no spring fishery, that it might be ascertained whether there is a return migration. All the specimens that I have seen are full-grown adults, and what is still more worthy of notice, all are males; out of several thousands I did not discover a single female, so that this species not only migrates, but it is the male alone that does so, so far as my observations go. If the females and males migrated in separate flocks, some of both sexes would be most probably taken, where the boats are so numerous; but every season produces the same result; the males alone being taken. But, from the size of the specimens taken, they are no doubt adults, and are much larger than one season would permit. It may therefore become a subject for enquiry, whether all the males, young as well as old, migrate, or whether the migration is confined to the adults. The females apparently remain in the shallow waters of the channel, and the males must in some way or other return to them in the early spring. Probably, however, as in other species, impregnation takes place one summer, while the ova are shed the next. This point, with many others equally interesting, I have ascertained by direct experiments, and in the lobster, while one set of ova are being shed others are rapidly developing themselves in the ovaries, to be impregnated after the shedding has been performed. During the period of what may be termed gestation, there is no exuviation, but generally within thirty hours after the ova have been all cast the shell is thrown off, and then most commonly impregnation takes place; but if the female be not impregnated, exuviation occurs very frequently during the spring, summer and autumn, varying with the age of the specimen. During the years 1855 and 1856, I kept several specimens alive in my tanks, for the purpose of watching their habits: for several days they kept quiet at the bottom, rarely seeking the shelter either of the stones or sea-weed, and even when stirred they seemed so sluggish that they rarely did more than just move out of the way. On placing a little sand at the bottom, they soon made an excavation, and sank into it, partly covered; towards the evening, however, or if the day was dull, they became more active, crawling rapidly from spot to spot. Sometimes they would creep on the stones and launch themselves off the edges, and at others they would elevate their bodies either against the glass or a stone, and rapidly vibrate the posterior claws; by this they rapidly rose to the surface, and in rising all the claws were frequently in motion; but in their progress, whether round the tank or obliquely, either in ascent or descent, the claws anterior in progress were the only ones used, the posterior ones being merely stretched out: the claws most effectively employed were the posterior two, and hence in progression the posterior part of the body became more elevated than the front. They swam with ease and rapidity, and would continue in motion for hours in a subdued light. Like most other Crustacea, the chief part of their movements take place at night: I have occasionally, by irritating them, forced them into activity by daylight, but their efforts soon cease, and they again sink to the bottom. They are very voracious, as well as active, seizing on the pollack, cod, and even mackerel, but they do not refuse dead food, as they devoured very eagerly bits of whiting which were given them from time to time. Although this species is so very active in its habits, and apparently voracious in its appetite, and is the most natatory of all British species, it would seem that they occasionally may be said almost to hybernate, as in some specimens dredged off Scilly during the latter part of winter, the back was covered with minute corallines and Serpulæ; but during the summer, and during the migratory season, the shell is smooth and clean. The general colour is a light fawn flesh-colour, inclining occasionally to a brown, and in some specimens to a black-brown colour. Several of the specimens while under examination passed through the process of casting their shells, and this was attentively watched: the general mode in which it is effected is precisely the same as in Carcinas Mænas. When the process has begun, the crab retires to the shelter of some overhanging rock or imbeds itself in the sand, and becomes entirely helpless; the posterior margin of the carapace gets lifted, and a soft substance protrudes through the opening: this increases, and the carapace gets more and more elevated, the waved margin or suture in front gets loose, and the body is drawn gradually out. Several of these perfected the exuviation in my hand, and, on immediate careful examination of the claws, I found that Réaumur is quite correct in saying that all the claws have a longitudinal slit, to allow of the escape of the broad internal muscular plates; these semicalcareous plates have their fixed part placed distally, their proximate surfaces being free, and affording wide attachments to the muscles of the limbs: in casting their shell these are left behind, which is done by their dividing the edge of each claw longitudinally: this is not only the case in the present species, but also in the Maia, in which it has been said not to occur. Immediately they escape from the shell, I have been enabled to separate the edges with a pin on all occasions; but in the course of ten minutes the surfaces become so intimately united as to present no traces of such a fact,—no line, no furrow, nor even a shade whereby the situation of the fissure could be detected,—the shell is entire in all its parts. From Mr. Gosse's remarks, that "neither were the shells split to afford a lateral passage for the limbs," &c., I suspect he has mistaken Réaumur's remarks. The shells are split in no part, but the soft claws of the escaping animal *are*, as, from the circumstances of the case they must be, for how else could such broad disks be drawn from the inside of a claw? In examining the large kind of Crustacea in various stages of preparation for the moult, I find that these large muscular disks undergo a change on both surfaces: the muscular masses are less firmly attached, and this becomes so apparent, that, besides becoming more fluid, they are found to be attached to a stout membrane, between which the solid plates lie, and from which in exuviation they are drawn out: these two membranes finally fall together and form the new plate, by subsequent consolidation. —*R. Q. Couch; Penzance.*

An Appeal to British Entomologists.—Brother entomologists! The study of Entomology may be said to promote four results: 1st. It is calculated to attract and please the eye—I mean the making a collection. This is the lowest result: in saying this, I am far from insinuating that it is an unworthy result: as well might we object to a traveller experiencing feelings of delight and gratification while he beholds some glorious panorama of nature. If therefore there be no other aim in view in making a collection than the mere pleasure of looking at and examining it, I consider such object highly praiseworthy and commendable. 2ndly. It is calculated to further Science, and, more or less directly, to promote the welfare of mankind, as has been admirably shown in the 'Introduction to Entomology.' 3rdly. It is calculated to elevate the moral tone, by supplying occupation to the idle, and by affording to the pleasure-seeker a pursuit fully as exciting as that of vice, with this further recommendation, that it is not only innocent, but essentially useful. 4thly. It is calculated to exalt the religious tone. If, as few will deny, the study of Nature tends to the study of Nature's God,—if, when beholding the mightier and more sublime works of creation, we cannot but recognise the hand of the Creator, surely when we examine the wonderful order, arrangement, decoration and mechanism of these, its *minims*, we cannot but be led at times to think of Him who is the sole Maker of all things, whether "in heaven above, or the earth beneath, or the water under the earth." Now these four results may be termed an "ascending scale,"—*i. e.* the first is likely to create the second, the second the third, &c. I think I am not mistaken in saying that nine-tenths of the lovers of Entomology have been, in the first instance, attracted to the pursuit of it by the marvellous beauty, endless variety and astonishing transformations which characterize these at once lovely and wonderful productions of an All-wise mind and an Almighty hand. A friend comes to look at your collection (possibly with ill-disguised contempt for the collector); but as drawer after drawer discloses its brilliant treasures—as his eye is dazzled with a gorgeous metallic colouring that mocks the hue of the rainbow, or gratified with the most delicate tracery and penciling, contempt merges in delight and admiration. Proceed to tell him of wonderful transformations—of the pleasures of rearing, sugaring, ivying, pupa-digging, &c., and the torch is kindled, and he becomes a collector. Some remain mere collectors all their lives, while others (and, I would hope, not a few) progress in the manner already alluded to: that some do, I know; and I hesitate not to say that it would be strong *prima facie* evidence with me of a man's moral and religious condition that he was a student of some branch of Natural History; but unhappily there is nothing good which cannot be made bad, or used which may not be abused. Those whose progress never extends beyond the first result (making a collection) are too often actuated by a miserable, paltry and contemptible ambition—the ambition of having the "completest" collection: this ambition "grows with the growth" of the collection, *vires acquirit eundo*, and at length attains such a height that the collector at last loses sight of even common honesty: those persons adopt for their motto the advice of the father celebrated by Horace, "rem: si possis, recte; si non, quocunque modo, rem," which, being translated by the unscrupulous collector, means, "Mr. A. has an Empyrea, I have not, but have it I must,—honestly, if possible,—but, if not, I must still have it, some way or another." Accordingly, after having tried, possibly for a season or two, to obtain the insect honestly, but without success, he proceeds dishonestly, and buys for threepence or so, an insect, which, if a genuine British specimen, would possibly cost as many pounds,—or obtains the eggs or pupæ from abroad, and having bred the insect in England, attempts in this way to escape the charge of telling a direct falsehood when he asserts that it is an English specimen. Such a man is beneath contempt. Many are the methods employed by these men, but I love not to dwell on them. Suffice it to say that the system is now carried to such an extent that we know not whom to trust or believe, and I therefore now appeal to one and all my brother entomologists to set their face against it. I would appeal to the honourable, the moral, the religious feelings of those who may have been or are guilty of such practices. Do not bring disgrace on yourselves—on the noble and elevating, but abused pursuit you follow—on Him whose creatures you are, in common with those you profess to study! Do not let the entomologist be pointed at with the finger of scorn! Do not give so apt and ready a handle to the derider of our favourite pursuit! It was not such a principle as this which actuated Linneus, Kirby and a host of others, whose names are reverentially remembered by us, their humble but zealous followers! Oh! then, once more, I would appeal to your better feelings: abjure these miserable and contemptible practices—be honest, just and straightforward! Perhaps in so doing your collection may be smaller, but your peace of mind and self-esteem will be proportionably greater. In all good will and fellowship, your brother entomologist—*Joseph Greene; Playford, Ipswich, February* 12, 1857.

Honesty and Dishonesty.—There is a great deal to be said upon the subject of exchanging or purchasing insects—of honest or dishonest dealers—of honest or dishonest collectors. It is a very sad thing to know that there are men who will prostitute the honour and dignity of Science, and degrade the very name of Entomology, by having recourse to dishonest conduct. Talking to a valued friend last year, in my garden, I was almost horrified by being told that such is the low moral standing among entomologists that, were a new insect to be discovered, there are vast numbers of collectors who would at once doubt the genuineness of the discovery! Such a state of things is not only abnormal—it is positively disgraceful, and it must, if not checked, ultimately destroy that unreserved communication which prevails among the votaries of other branches of Science. Fancy a high-minded, honourable man, devoted to the charming pursuit of Entomology, having even the faintest breath of suspicion thrown upon the successful fruits of his zeal and industry! Fancy the possibility of some vulgar brute getting up in some Societies' meetings, and doubting the genuineness of the said enthusiast's last discovery! Why such a *contre temps* as this would drive nine hundred and ninety-nine out of every thousand gentlemen out of the field of Science in disgust for ever; and yet I am told, and read in publications, that such a thing is more than probable. Now I wish to say a word or two upon such an unsatisfactory state of things: and first as to the cause of the evil. This seems clear enough: there are dishonest dealers and dishonest collectors (I quote from a publication called 'The Substitute'), "simply and entirely on account of the tremendous prices that certain persons will give for rarities, and such prices operate as great temptations to men of small means and principle." I believe this to be perfectly true; and I think the remedy is equally obvious: this "temptation to men of small means and principle" must be at once and for ever removed. There are two ways, in my opinion, by which this can be effectually done, provided British collectors are firm enough and honest enough to adopt either alternative at once. My first remedy was, I think, shadowed forth in one of the leading articles of the 'Intelligencer' of last year: it is that of admitting at once into our cabinets foreign specimens of those insects which are rare here and *desiderata* in our collections, and marking them as such. Thus, if a rare insect is taken, it will continue to be a great prize with its captor, but its money value will be gone, inasmuch as a series may be purchased from any of our respectable dealers for an old song. In my collection of British eggs the majority are of course foreign specimens, but no one pretends that a collection of eggs is deteriorated by this unavoidable necessity. I will anticipate one or two objections to this plan. 1st. It is said our collections of insects will get so mixed that it will, in time, be impossible to say which are English and which foreign specimens. If this objection were sound, the grievance would not be so great as that which obtains by dishonestly mixing up species; but I do not think the objection will hold water: the commonest precaution would prevent a specimen marked "F." from being confounded with one labelled "B." Take away the money value inducement, and depend upon it the insects would keep clear of each other. 2ndly. It is said such a collection would not represent a British Fauna. This will only apply to the assumed possibility of insects being called British which have no title to the distinction; but if the editor of the 'Entomologist's Annual' would give up, as at present, a page or two every year for the insertion of specimens proved by indisputable evidence to be British, this objection vanishes. 3rdly. It is said that this plan would destroy the interest excited in looking for rare species, and thus reduce the number of our collectors. I am not sure that a great part of the evil complained of—*i.e.* dishonesty—would not be advantageously removed by weeding from our collectors those who follow the pursuit for the mere purpose of getting hold of and keeping those species which other people cannot: these are, *par excellence*, "mere collectors;" the Science would get on a great deal better without them, and they might find a consolation in taking to pigeons or postage-stamps instead. The scientific labourer would be spared the nuisance of being pestered with letters without end and insects hopelessly mity and greasy. It would be a great relief if some of the S's and T's alluded to by a writer in the 'Substitute' would give up collecting. But if, after all, the majority of entomologists objected to the plan of introducing foreign insects, and would rather prefer a limited and pure collection to one illustrated by specimens from other parts of Europe, then I must fall back upon my second proposition; and this is to separate the chaff from the wheat. Let there be a united determination among honest men to have no dealings of any kind with dishonest ones. If we cannot have a republic, let us have an oligarchy. Let the tempter and the tempted—the men with great means, who corrupt the men with small ones, and the men with small means and no honesty—be equally avoided. Let them be tabbooed as men who degrade Science into the lowest form of barter. The greatest half of the dishonesty which is staining the fair name of this country exists in men who wear good coats and condone the rascality which is corroding the best principles of the world around us. I shall be glad to receive the opinions of entomologists on my views: if they cannot agree with either, perhaps, from such a correspondence, I may be able to gather the materials for a more practicable proposition than either of mine; if not, and there is no remedy, then, I fear, despite the high names of such men as Haworth and Stephens, of Kirby, of Ray or White, or the *alumni* of modern days, I must confess that I shall request my friends to call me anything but an entomologist.—*C. R. Bree; Stricklands, Stowmarket, February* 6, 1857.

Lepidoptera and their Parasites.—So closely associated are these creatures with the investigations of the Lepidopterist that to me it seems strange no one should have thought of publishing, from time to time, short notices of such species as he may have reared from the larvæ and chrysalides of the various Lepidoptera which has produced them. The Micro-Lepidopterist, especially, who has the time, and pays attention to the rearing of these gaudy atoms, must have remarked the enormous preponderance of the parasites he breeds over the insect itself, and one would think that surely a great portion of these parasites must be new to Science, or, in very many instances at least, rare: their minuteness favours this assumption, as also the comparatively few heads who have hitherto done anything for these families. Then, again, where there are such amongst them as are known to be common, their previous economy has been a matter quite neglected, because of the want of means of knowing where and how to set about looking for them in their earlier stages. Now, however, this can no longer be a hindrance, as probably the investigations in, and real natural history of, the Micro-Lepidoptera are better understood than those of the larger groups, not but what they, from day to day, are getting more explained and simplified, but the inquiry has not been instituted with such zeal: there have been few Joseph Greenes in the field, laying bare the roots of the trees in winter, and gathering the harvest in the summer time; as a general rule, it has been a matter of procuring specimens—"fine specimens,"—at the cost of postage, and a box of such rubbishy things in return, that the box in which they were sent narrowly escaped sharing the flaming reception of its contents. Owing to the amount of energy which has been and is displayed in working out the transformations of the Micros, both at home and abroad, the thing is beginning to resolve itself into a very small compass, and it is but natural that the inquiring mind should wish for some other channel into which to pass, that it may prosecute researches there as vigorously as it has hitherto done in the group in question. The chances for becoming distinguished in other branches is much greater, and the charms of the species under the new investigation will develope themselves to the mind and the eye as the student advances in his researches; he will find that this new insight into Nature is as replete with beauties as that with which he was previously acquainted; the attractions they offer are quite as great as the Lepidoptera, and if gaiety of colour plays any part in the contemplative pause on the threshold, these possess it in no ordinary degree. Then we want to know something about the act of oviposition; whether it takes place before the larva has attained a certain age or whether all ages are alike favourable, and whether the larva of the parasite itself, thus hatched, is ever pierced by one of its own species. The distribution of species would also be arrived at, for it would be ascertained whether different localities yielded the same parasite from the same larva. I trust the coming season will bring with it fresh hands and hearts, and that our knowledge may be considerably extended over those portions of the insect world which often blight the hopes of the entomologist. Many are the phases to which they will find their thoughts called to dwell on, and if God hath so willed that the bright colouring of the butterfly is the lurement to the study of the insect, may he not also have given compensating qualities, even greater, in the economy of those now in duty bound to prey.—*John Scott; Southfield Villas, January* 13, 1857.

British List of Lepidoptera.—With reference to my friend Mr. Crewe's remarks (Zool. 5436), I beg to say that it was my intention to have published a synonymic list of British Noctuidæ, Deltoides and Pyralites, after Guenée's arrangement, but I have abandoned that intention, in consequence of discovering (which I did with great pleasure) that it is Mr. Doubleday's intention to publish a second edition of his 'List' immediately upon the appearance of M. Guenée's Geometridæ.—*C. R. Bree; Stricklands, Stowmarket, February* 9, 1857.

Pupa Hunting.—The perusal of Mr. Greene's instructive paper (Zool. 5382) has induced me to suggest a locality, in woods, &c., for pupæ, not particularly pointed out by him, *viz.* the tops of moss-covered stumps of trees that have been cut down. On two occasions this week, while passing through a small plantation of larch which has been well thinned by the woodman's saw, rather than his axe, some of these stumps were examined, and a number of pupa-cases (mostly empty, however) were observed, chiefly between the moss and the flat surface of the wood. The moss-covering is easily removed by the hand, and, when dense and thick, its under surface should be looked at, as well as the part of the stump from which it is raised, as it is apt then to carry the pupæ along with it. Some Lepidopterous larvæ were at the same time found in these localities, which, being raised a foot or so above the general level of the damp ground, have probably been selected as drier and more suitable spots wherein to pass the winter, if not to undergo their transformation. Several species of the more common Coleoptera, among which Loricera pilicornis was the most abundant, were found in the same snug retreats; these were a little torpid at first, but yet alive and in good condition for the cabinet, even in this the first month of the year. Neither the number of my visits nor the success obtained on these two occasions can warrant any sanguine expectations from such localities. My purpose is accomplished if this notice shall induce any of your readers to search them when they meet such moss-covered stumps in their hunting-grounds, and to report to you the result.—*G. Gordon; Birnie by Elgin, N.B. January* 17, 1857.

Pupa Digging round Manchester.—During the last fifteen years this system, apparently so little practised in the South, has been carried to great excess in this district: many thousands of chrysalides are annually procured from the roots of poplar, oak, beech, chestnut, willow, &c.; with the exception of one Chaonia, I am not aware of a single rarity bred,—certainly none ever fell to my share; the bulk are composed of ocellatus, Populi, bucephala, dictæa (rare), Populeti, instabilis, stabilis, cruda, munda, gothica, megacephala, bidentaria, betularia, &c., of which fifty per cent. are instabilis. The amazing labour required to procure a great number of chrysalides, and the result, so far as this district is concerned, is a complete waste of time and exertion. The great point in favour of digging, even in a barren district like this, is that it enables the collector to employ his spare time in the winter and spring months, instead of being idle. Judging from my own, and the result of other, diggings, I have not the slightest hesitation in saying the system must rank far below the usual methods of procuring insects; for instance, compare the result of a few nights' attention to sallow blossoms, if instabilis, Populeti, munda, stabilis, &c., are wanted, or a stroll into the woods at night with a lantern in October and November, and again in spring,—he must be an extensive proprietor of boxes, if not fully satisfied with abundance of common species, in the finest condition. A trowel is never used for digging in this district, but a far more effective instrument, in the shape of a small three-pronged garden fork, with the prongs bent downwards, requires less exertion than a trowel in pulling up grass, sods, &c., and, where the surface is free from rubbish, rakes the ground effectually. Some years ago, when the cocoons of Cerura bifida were in great demand, our collectors brought the hunting of them to great perfection; there is no "royal way" of finding them,—nothing but practice: the cocoons are placed very irregularly, sometimes on the bark below the soil, others several yards above, the majority from one to five feet: the larvæ occasionally ramble, and form their cocoons on oak, alder, &c., invariably a poplar close by: the most productive trees are those growing on the banks of streams. Perhaps Mr. C. S. Gregson, of Liverpool, will communicate the result of his experience in "raking" the sand hills at New Brighton, and how the different species of Agrotis, Mamestra albicolon, Leucania littoralis, &c., are procured.—*Robert S. Edleston; Manchester, February* 2, 1857.

Correction of an Error in the 'Intelligencer.'—At p. 173 of the 'Intelligencer' is my notice of the capture of Lathonia, which I have lately found out (by seeing it in the British Museum collection) to be only Aglaia: it is very much like Lathonia, being exactly the same size, of a much lighter colour than Aglaia generally is, and has no green on the under side of its hind wings. As I had never seen Lathonia, and relied upon the description, to which I thought it exactly answered, as to the time of its appearance, &c., I hope I shall be excused this mistake.—*Hardinge W. Browne; 1, Westbourne Street, Hyde Park Gardens, February* 21, 1857.

Butterflies attracted by Sugar.—My attention was directed, in the early part of September last, to a dark, moist substance, on the trunk of an oak tree, and on which were feeding a quantity of Vanessa Polychloros and V. Atalanta, of which, in less than an hour, I took thirty-five. It struck me that if the insects were thus attracted by this natural discharge, it would prove more so if I dressed the same with my mixture used for taking moths: I dressed the tree, and it was, in a few minutes, covered with the above-named insects, and a female Apatura Iris came and partook so plentifully of the mixture as to actually fall on the ground when struck at with my net (quite "buffy"). I feel confident that the same fly may be easily taken as stated in its season, and where they are known to resort.—*A. Russell; Ashford, Kent, February* 14, 1857.

Caterpillar of Phalæna escula.—The caterpillar of Phalæna escula commits great depredations in the olive trees. The egg having been deposited in the wood of an olive tree, the grub bores a broad round passage for itself in the length of the branch, beneath the bark. Nothing is seen outside, and an unpractised eye fails to detect even the original aperture (which is closed by a substance resembling the wood). On cutting open this part, a long cylindrical cavity is seen, and by following the direction of it, with a long wire, they destroy the insect, and prevent further injury to the tree. It appears that measures have only been taken of late to kill them, and these grubs have long been allowed to commit their depredations with impunity.—*Sir J. G. Wilkinson's 'Dalmatia,'* i. p. 177.*

On the use of the Anal Fork of the Puss Moth (Cerura vinula).—The observations of Mr. Gosse on this subject (Zool. 5254), though made with his usual accuracy and minute detail, and therefore very interesting, are not, as he seems to think, new. The same facts have been observed by many naturalists, and an account of them may be found in the entomologist's *vade-mecum*, "Kirby and Spence," in the letter on "The Means of Defence in Insects." As the passage is very concise, I venture to extract it:—"From each of the branches of the tail there issues a long, cylindrical, slender, fleshy and very flexible organ, of a rose-colour, to which the caterpillar can give every imaginable curve or inflection, causing it sometimes to assume even a spiral form. It enters the tube, or issues from it, in the same manner as the horns of snails and slugs. These tails form a kind of double whip, the tubes representing the handle, and the horns the thong or lash with which the animal drives away the ichneumons and flies that attempt to settle upon it. Touch any part of the body, and immediately one or both the horns will appear and be extended; and the animal will, as it were, lash the spot, where it feels that you incommode it."—Vol. ii. (6th ed.) p. 205. This account and that given by Mr. Gosse mutually confirm each other in every particular.—*Alfred Merle Norman; Kibworth, January* 16, 1857.

Note on the Economy of Psyche opacella.—In exchanging with Mr. H. Tompkins, I sent him some pairs of Psyche opacella. I sent the females to him, just as I had sent them to other entomologists, but Mr. T. said he did not for a moment suppose I was going to take the females out of their cases, as they never left the case: I assured him that I did not do so, but that, as soon as the females deposit their eggs, they become feeble and shrivelled, and drop out of the case. Mr. Tompkins replied that if the fact was as I stated I ought to give some public notice of it, that I

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* Communicated by Mr. Walker.

assumed a great deal too much, and that my explanation of how the females get out of their cases is satisfactory, to a certain extent, but that I do not state how the opening in the case by which they drop out is made: he asks, "When do they make it, and for what purpose?" I proceed to give a short account of this curious female: I commence at the time the larva is full-fed: it then finds a suitable locality for fixing the case; and now that end of the case that was formerly the aperture for the head and legs, for the convenience of feeding and crawling about, being no longer wanted open, the larva spins up that end and turns round in the case; in fact, the case becomes inverted, and the larva sets that end of the case in proper order for use, forming another aperture, and that end of the case is lengthened, in the shape of a funnel, it being made soft and elastic, but the end is not quite open till after the female has burst from the pupa. The pupa of the female is thin and pliable, unlike the pupa of the male, and with energetic twists of its body it is enabled to go up and down its gauze-like funnel with astonishing rapidity: the funnel serves for a weather-guage for both male and female; it serves for the female both in the pupa and perfect states, but for the male only in the pupa state. The female moves up to the top of the funnel when in pupa, and if the sun shines and the time has arrived for assuming the imago, it liberates itself from the case, and just thrusts its head out at the end of the funnel, and there awaits the arrival of the male until night comes on, or the sun is clouded, or it is disturbed: in either of these cases it will move down to what is now the bottom of the case; next day, if all is right, it will be at the top of the funnel again, and until the male finds her; when he has arrived, she goes down the case and raises the lower extremity of her body. The body of the male is somewhat similar to a telescope; it lengthens out between every joint or segment: the male introduces his body into the funnel, and copulation takes place: afterwards the female remains out of sight, laying her eggs, which are covered with a glutinous moisture, within the case; she then falls through the aperture of the funnel, which opens downwards. The funnel of the male is considerably longer than that of the female. It is truly astonishing how fast the pupæ will travel up and down their funnels; they ascend occasionally to ascertain if the sun is shining, and if not they will not burst the pupa-case, as they fly only in the sunshine: they will thrust the pupa one half out, and more if it pleases them to come out and leave it.—*Richard Weaver; 25, Pershore Street, Birmingham.*

Cases of a supposed new Psyche found on Rocks near Conway.—Last summer, when collecting in North Wales, I found several small cases on the rocks near Conway that were entirely new to me: they were covered with lichen, on which very probably the larvæ feed; the cases are round and a little curved, and much longer at one end than at the other. A question at once arises, To what insect do these cases belong? A close inspection shows them to be Lepidopterous. I sent some of them to an entomological friend: his answer was, "Your case-bearers are, to the best of our knowledge, not Lepidopterous." But, shortly after that, I received a second letter from the same friend, saying, "I am happy to inform you that your case-bearers have produced Lepidopterous insects; but the specimens are all wingless females, so that he must indeed be clever who can say what they are." The female bears a close resemblance to the wingless female of Solenobia inconspicuella; but the cases of the two species differ in shape very widely. Entomologists who may be going to Conway will do well to keep a sharp look-out for the male, and to ascertain its name.—*Id.; February* 5, 1857.

Nomenclature of Noctuina.—"I am, however, much comforted by hearing from my most worthy friend, Mr. C. R. Bree, that he is shortly about to publish a list of the British Noctuina, in strict accordance with the arrangement of M. Guenée," writes the Rev. H. Harpur Crewe. Very well, say I; they are quite welcome to "comfort" one another, if they like, but I protest against the pages of the 'Zoologist' being made the vehicle for their doing so. Already have more than nine pages been filled up with "fatty" matter relative to the Deltoïdes and Pyralites, of no use to any one professing to be an entomologist, since all such must possess M. Guenée's works, and the volume in question can be had for 4*s.* 3*d.* If the same proportion of space is to be applied to the Noctuina, your readers must calculate on at least sixty pages of similar matter. I have not the slightest wish to prevent Mr. Bree indulging in the luxury of printing at his own cost, but I think the majority of your readers will not relish the appearance of two or three more double numbers filled with mere copied catalogues.—*George Wailes; Newcastle-on-Tyne, February* 10, 1857.

Pupa of Agriopis aprilina.—At p. 268, No. 12, of the 'Manual,' Mr. Stainton says that the pupa of Agriopis aprilina is buried to a great depth. I am utterly at a loss to conceive upon what grounds Mr. Stainton has arrived at this conclusion. I have very frequently dug up the pupa of A. aprilina; in fact, it is one of the commonest at the roots of oak, in the early autumn. I have invariably found it immediately below the surface of the soil. All my entomological friends tell me the same thing, and I think that even the most incipient entomologist will be able to confirm my statement. I can only account for Mr. Stainton's remark by supposing that the Agriopis larvæ in the neighbourhood of Lewisham are, like the Earthmen of Central Africa, endowed with burrowing propensities uncommon to the rest of their species.—*H. Harpur Crewe; Stowmarket, February* 10, 1857.

PS. Subsequently to writing the above, I find, upon reference to M. Guenée's work, that Mr. Stainton has copied, almost *verbatim*, M. Guenée's remarks on the pupa of A. aprilina. My observations will therefore equally apply to M. Guenée.—*H. H. C.*

Pupa Raking.—After reading Mr. Gregson's paper on "raking" (Zool. 5432), I was considerably perplexed to understand how Mr. G. ever came to give the term "raking" to the operation he there describes. The term "raking" appears to me to necessitate the use of a "rake"; but it does not appear that Mr. G. ever uses one: his plan is no doubt a very useful one, and his suggestions valuable to the entomological world; but I should strongly advise him to designate his operation by a more congenial term. Now I had often heard of "raking," and supposed that it meant actually using a "rake." Accordingly, one day last October, I armed myself with a small rake of four or five teeth, and proceeded to a dry, gravelly bank, which, in the summer, is generally covered with the bladder campion (*Silene inflata*) and the common lychnis (*Lychnis dioica*), and where I had frequently taken the larva of Dianthæcia capsincola and D. carpophaga, and several times that of Eupithecia venosata. I steadily "raked" up the soil of this bank for the space of some twenty yards or more. I was at work about an hour, and in that time found five pupæ of D. carpophaga, one D. capsincola and one E. venosata. I left the neighbourhood soon afterwards, and was not able to try the place a second time. The soil of the bank is light and friable, and in the winter tolerably destitute of vegetation. In such localities I have little doubt that "raking," in the literal sense of the word, might be pursued with much success.—*Id.*

Larva of Laphygma exigua.—Mr. Boud having kindly consented to exhibit, at the Entomological Society, two bred specimens of Laphygma exigua, and likewise to read a short and imperfect description of the larvæ, with their dates of change, I place at your disposal a copy of the same for the 'Zoologist.' I never myself saw the larvæ: the description was written by a lady. The larvæ were kept separate; therefore, there is no doubt of the correctness of the description.

LAPHYGMA EXIGUA.

Female, captured about July 18, 1856; laid three or more eggs, which hatched in about three weeks, were full-fed, and went down about September 12th; came out October 22nd and 24th.

Description of Larva:—Pinkish brown back, pinkish yellow underneath; a row of black spots down the back; two rows down each side, between which are white spiracles on rather a darker ground than that outside the rows of black spots; head and tail a greenish hue: length of full-grown larva 1 inch. The larvæ fed on plantain, rolled up in the leaves at the roots, concealing themselves from observation. There were five pupæ discovered in all, two of which were each twice as large as either of the other three; these three smaller all came out L. exigua, as above; the larger two still remain alive as pupæ. The above description applies to the smaller larvæ; the larger were also described, and differed slightly: their habits being the same, I imagine they were introduced with the food when young.—*Alexander Wallace; 5, Green Terrace, Clerkenwell, February* 20, 1857.

The supposed new Œstrus.—I was not a little surprised to see announced in the 'Zoologist' (Zool. 5438) the discovery of a new species of the Œstrus or bot-fly, and as this remarkable family has been an object of my especial care and consideration, as the third and sixth volumes of the 'Transactions of the Linnean Society' testify, I looked at it with no small curiosity and astonishment, and which, so well described, has brought me to the conclusion that it was not a new species, as its ingenious author supposes, but a variety only of that very varying insect, the Œstrus veterinus of my enumeration, which has been the stumbling-block of many; Fabricius, for instance, has made no less than three species out of these varieties, and Dr. Leach has made two, one of which, his Œstrus Clarkii, in honour of my name, I satisfied him was one of this multiform-coloured insect. Linneus himself, who first described it, committed the first blunder, in calling it the Œstrus nasalis, apprehending strangely that it inhabited the nostrils of the horse: as this proved a gross error, I was reluctantly obliged to change its name, and to give it the above, as relating to animals of burthen, from the verbs *veho*, *vecto*, to bear or carry, and my rectification has been generally adopted on the Continent: other writers have also blundered about it, so that it might very well bear the name of Œstrus erratorum. It has been observed to deposit its eggs on the breast of the horse, and in its larva state, of which I have had many, it inhabits the stomach of the horse, with three other species of this genus. I used to find the chrysalis under dung, in the fields about Worcester. If your obliging correspondent will transmit it to London to my address, as given at foot, I would examine it, and confirm these remarks or otherwise, and send him other coloured specimens of it.—*Bracy Clark; 18, Giltspur Street, London, February* 2, 1857.

Capture of Nomada ochrostoma in the North of England.—I have taken a series of the very beautiful Nomada ochrostoma, *Kirby*, in the immediate vicinity of this village: they frequent a mixed colony of Halictus rubricundus, Andrena cineraria and A. albicans; but I think they are parasitic upon A. cineraria. I have also taken a few examples near Heaton, at Mitford, at Gibside, and near Lannercost, in Cumberland; so that it is pretty widely distributed. Both sexes have been captured, but the females in much greater plenty than their partners; they appear early in May, and continue until the end of June.—*Thomas John Bold; Long Benton, Newcastle-on-Tyne, February* 27, 1857.

Note on the Copulation of Bombi.—So little appears to be known of the loves of the Bombi, that I venture to record the only instances when I have noticed them in *coitu.* On the 29th of August I found a pair of Bombus lapidarius, *in copulâ*, amongst the grass on the sea-banks, near Whitby, Northumberland. When looking about for insects at Long Benton, on the 25th of July last, the laborious flight of a Bombus attracted my attention; of course I at once gave chase, and captured, instead of one, a couple of B. hortorum, which, after flying, *in copulâ*, the length of the garden, alighted on a rail, and were, without mercy, consigned to the bottle, thence to be promoted to a place in my collection.—*Id.*

Description of a new Hymenopterous Insect, found amongst Seeds of various Species of Pinus from California.—The insect I am about to describe was found amongst the seeds of Picea bracteata and a new species of Thuja, and in Pinus nobilus, &c. The insect appears to be parasitic on some species of Cynips, at least I consider it to be so: I have several pupæ of the Cynips (if Cynips it be), but they are not far enough advanced to determine that point: I am trying to rear them; if I succeed I will make it known through the pages of the 'Zoologist.' The Chalcis is a very beautiful one, and appears to retain its colours after death: the insect is a female; the male I have not been able to meet with, and if the males are as rare as those of our Callimome Devoniensis, it is not very likely I shall be able to see them. The insect belongs to the genus Megastigmus of Dalman: there are but few species belonging to the genus known; I therefore consider this a very interesting addition, and as it appears to be generally attached to the Pinus family I shall call it

MEGASTIGMUS PINUS, *Parf.*

Disk of female black; the clypeus a large trifid spot above it, and the sides of the face broadly pale greenish yellow; the mandibles pale testaceous, their tips black; a pale greenish stripe behind the eyes, and a dot at their vertex. Antennæ, the scape yellow in front, the flagellum fulvous beneath. Prothorax subquadrate above, with a transverse greenish yellow macula at its apical margin; a small square spot on the metathorax. The scutellum and post-scutellum orange, forming a large oblong spot; a small green stripe before the tegulæ, and a large one in front of it in the prothorax. Legs pale or honey-yellow, inside of the posterior femora black; the tips of tarsi dusky. Wings hyaline and beautifully iridescent, particularly the posterior pair; the costal nervure and the stigma black. Abdomen, a longitudinal greenish yellow stripe along its sides; the second, third and fourth segments with an oblique triangular greenish yellow spot on each side, uniting to a central honey-yellow, longitudinal stripe above; ovipositor black and pubescent; there are also ten black setæ arising from a small black protuberance in the apex of the abdominal segment above, and quite distinct from the ovipositor; these setæ diverge on each side, forming a sharp angle with the apex of the abdomen. I cannot conceive what these appendages can be for. Length 8¾ lines; expanse of wings 4 lines; ovipositor 2½ lines.

It is a very beautiful species: it is very curious how an insect so small can insert its ovipositor between the large scales of the pine-cones, so as to reach the larvæ of the Cynips (?) residing in the seeds: the economy of this insect would be very interesting, if any one residing where the species abounds would work it out.—*Edward Parfitt; 4, Weirfield Place, St. Leonards, Exeter, February* 10, 1857.

Occurrence of Latridius filiformis, Gyll., *near Exeter.*—I have great pleasure in adding this interesting species to the British list, having been fortunate enough to discover about forty specimens of it in a fungus I had put by in a box and forgotten. As I have been studying the Fungi of Devon for several years, I had collected the one in which this species was found, in one of my rambles last summer; but the Latridii had eaten the fungus so much that I was not able to say what species it was. The Latridius I very carefully examined under the microscope, and found it was an undescribed British species; I consequently sent some of them to E. W. Janson, Esq., who very kindly informed me it was L. filiformis, *Gyllenhal* and *Mannerheim*. I also sent some to F. Smith, Esq., at the British Museum, for him to compare them with the Continental specimens of that species, and he found them to be the same; so there can be no mistake about its being the true species.—*Id.; February* 11, 1857.

Capture and Description of Epuræa neglecta.—Lately, when naming a few beetles for a correspondent, I detected a specimen of Epuræa neglecta, a species not hitherto recorded as British. As it will, in all probability, be found elsewhere, I have sketched its more prominent characters:—

EPURÆA NEGLECTA, *Sturm, Deutschl. Ins.* xv. 63, 8, pl. 295, b. B. = *Erichs. Natur. der Ins. Deutschl.* iii. 147, 9.

Nitidula neglecta, *Heer, Faun. Col. Helv.* i. 396, 8.

Short ovate, slightly depressed, sparingly covered with griseous pubescence; blackish brown, with the antennæ, outer margins of thorax and elytra, and the legs pale ferruginous; head, thorax, scutellum and elytra closely and distinctly punctured; thorax nearly twice as broad as long, much narrowed in front, slightly emarginate, the sides dilated and rounded; elytra with the disk a little uneven, broad, narrowing slightly towards the apex, which is truncate. Length 1⅓ line.

The broad ovate form, blackish brown colour, pale margins, antennæ and legs, will readily distinguish this species from its congeners. The only specimen that I have seen was taken, beneath the bark of a decaying elder, by Mr. Constantine, near Acrington, Lincolnshire, about February, 1856. A. Murray, Esq., informs me that it has also been captured near London, by the indefatigable Dr. Power.—*Thomas John Bold; Long Benton, Newcastle-on-Tyne, February* 14, 1857.

Captures of Coleoptera in Leicestershire.—In consequence of a permission kindly granted to me by John Ellis, Esq., to enter many rich and interesting spots belonging to the Midland Railway Company, and owing to the same kindness on the part of the keepers of Buddon Wood, I have been enabled to extend my researches in localities that have not hitherto been examined by the prying eye of an entomologist, and to add to our local Fauna many new and interesting species. In addition to those recorded by Mr. Bates in the 'Zoologist' (Zool. 4437), are the following:—

Calosoma inquisitor. The habitat of this interesting creature is upon the oaks in Buddon Wood, and can be found in May and June in the following manner:—Place your back to one of the large trees, stand perfectly still, watch the upper boughs for a few minutes, and they will be seen first peeping down, to see that all is right below, running a short distance, and then taking another look below, and so on, over the tree: to capture them, provide yourself with a large stone, and suddenly jerk the bough when they are running. Perhaps the unpractised eye may not at first detect them, as they are careful to keep in the centre of the bough, and, unlike other tree species, they cling to it with great tenacity. I once had to abandon a fine specimen, for fear of separating the legs from the body by trying to push it off the bough with a stick.

Chlænius vestitus. Occurs in two localities in this county,—in an old gravel-pit near to Saddington Reservoir, and in a marshy ground near the railway at Syston,—at the latter place I took seventeen specimens in July and August, 1854. I was greatly surprised and amused to find this insect so readily take to the water: one day, lifting up a tuft of grass that was hanging over the edge of a shallow pool, I found seven or eight specimens basking together; before I could bottle a pair of them, I saw the others scampering across the water with great rapidity, to a sand bank on the opposite side, having no other means of escape.

Bembidium flammulatum and B. articulatum. In profusion at Syston pit; previously considered scarce. May to September.

Heterocerus lævigatus. In a muddy bank near the railway at Brooksby.

Hydrochus elongatus. A single specimen, by sweeping aquatic plants, at Syston.

Anisotoma (Leiodes of Steph.) cinnamomea. Near Sheethedges Wood; rare. October, 1855.

Antherophagus silaceus. Brazil Wood, in July.

Trogosita mauritanica. A single individual I took from some old palings at Ratby, July, 1856.

Throscus dermestoides. One specimen from the alders in Bradgate Park. September.

Miccotrogus picirostris, Erirhinus (Notaris of Steph.) Scirpi, Tanysphyrus Lemnæ. By sweeping Lemna minor and Valeriana dioica in a pond at Syston. July and August.

Apion pallipes. Shook off the oak near Cork Hall, in June.

Rhynchites ophthalmicus and R. Alliariæ. These two interesting and timid creatures are found upon an isolated hawthorn near the centre of Buddon Wood—the only locality in the county, that I am aware of. They make their appearance when the thorn first begins to bud, and appear to possess an acute sense of hearing, for if the slightest noise is made when approaching the tree they will fall suddenly to the ground, and be lost for that day. I captured eleven specimens of R. Alliariæ and nine of R. ophthalmicus between April 22 and May 16, 1856.

Tropideres sepicola, *Herbst.* A new British species. See 'Entomologist's Annual,' 1857, p. 84.

Macroplëa Zosteræ. On the banks of Groby Pool in June, 1856; rare.

Lycoperdina Bovistæ. A single example from Buddon Wood, September, 1856. —*F. Plant; Leicester.*

A Systematic List of Coleoptera found in the Vicinity of Alverstoke, South Hants. By ARTHUR ADAMS, Esq., F.L.S., Surgeon of H.M. Surveying Ship 'Actæon;' and WILLIAM BALFOUR BAIKIE, M.D., F.R.G.S.

(Continued from page 5447).

NECROPHAGA.

2. Fam. ANISOTOMIDÆ, *Steph.*

1. Agathidium, *Ill.*
A. atrum, *Payk.* Rare.

BRACHELYTRA.

We have been saved from great trouble and labour in naming our Brachelytra by the kindness of Dr. Power, and of G. R. Waterhouse, Esq., who have most obligingly determined and identified for us a large number of species.

1. Fam. PSELAPHIDÆ, *Leach.*

1. Pselaphus, *Herbst, Steph.*
P. Heisei, *Herbst.* P. Herbstii, *Steph.* In moss; rather common.

2. Bryaxis, *Leach, Steph.*
B. impressa, *Panz.* In moss; rare.

3. Tychus, *Leach, Steph.*
T. niger, *Payk., Steph.* Among moss on bark of trees; scarce.

4. Bythinus, *Leach.* Arcophagus, *Steph.*
B. glabricollis, *Reich., Steph.* B. clavicornis, *Panz.* In moss; rare.

2. Fam. STAPHYLINIDÆ, *Leach.*

1. Sub-fam. *Aleocharinæ.*

1. Myrmedonia, *Erich.* Astilbus, *Steph.*
M. canaliculata, *Fabr., Steph.* On damp banks and under dead leaves.
M. limbata, *Payk.* M. Pella, *Steph.* On damp banks and under dead leaves.

2. Ocalea, *Erich.*

O. picata, *Kirby, Steph.* O. castanea, *Erich.* Not common; in moss.

3. Homalota, *Mann.* Bolitochara, *Steph.*

H. occulta, *Erich.* Under decayed bark; occasional.

H. brunnea, *Fabr., Steph.* H. zonalis, H. atriceps, H. thoracica, *Steph.* H. cinnamomea, *Steph., Ill.* Under decaying bark; not rare.

H. validicornis, *Märk.* Under decayed bark.

H. fungicola, *Thoms.* Under decayed bark.

H. analis, *Grav., Steph.* Under decayed bark; tolerably common.

H. vernacula, *Erich.* Under decayed bark; tolerably common.

4. Oxypoda, *Mann., Steph.*

O. longiuscula, *Grav., Steph.* Under bark; occasional.

O. brevicornis, *Kirby, Steph.* O. cuniculina, *Erich.* Under bark; not scarce.

5. Aleochara, *Grav., Steph.*

A. fuscipes, *Fabr., Steph.* In carcases; very common.

A. bipunctata, *Grav., Steph.* In dead eels at Grange.

A. nitida, *Grav., Steph.* A. bilineata, *Gyll.* A. Cursor, *Steph.* In dead eels and moles.

A. lanuginosa, *Grav., Steph.* In dead fish.

A. mœsta, *Grav., Steph.* In dead fish.

6. Myllæna, *Erich.*

M. gracilis, *Heer.* Centroglossa, *Steph.* Under decayed vegetable matter.

7. Hypocyptus, *Erich., Steph.*

H. longicornis, *Payk., Steph.* In moss; not abundant.

8. Conurus, *Steph.*

C. pubescens, *Grav., Steph.* Under loose bark, and in damp places under logs; not very common.

C. lividus, *Erich.* C. pyrrhopterus, *Steph.* Rather rare.

9. Tachyporus, *Grav., Steph.*

T. obtusus, *Linn., Steph.* In moss; not plentiful.

T. Hypnorum, *Fabr., Steph.* T. subtestaceus, *Steph.* Very plentiful; under heaps of weeds and refuse.

T. chrysomelinus, *Linn., Steph.* In moss; abundant.

T. solutus, *Erich.* In moss; rare.

T. ruficollis, *Grav.*, *Steph.* In moss; rare.

T. brunneus, *Fabr.* T. testaceus, *Steph.* In moss; very rare.

2. Sub-fam. *Tachininæ.*

10. Tachinus, *Grav.*, *Steph.*

T. silphoides, *Linn.*, *Steph.* One specimen taken in moss.

T. rufipes, *Linn.*, *Steph.* T. apicalis, *Steph.* Common; in dead animals.

T. subterraneus, *Linn.*, *Steph.* T. latus, *Steph.*

T. humeralis, *Grav.* T. cinctus, T. scapularis, *Steph.* Rather common; in carcases.

T. marginellus, *Fabr.*, *Steph.* In dead flat-fish.

11. Bolitobius, *Leach.*

B. analis, *Payk.*, (Megacronus), *Steph.* Under decaying trees and among grass; rare.

12. Othius, *Leach*, *Steph.*

O. fulvipennis, *Fabr.*, *Steph.* Rare; in damp places.

O. læviusculus, *Steph.*, *Kirby.*, punctipennis, *Lac.* Under sods in boggy places.

3. Sub-fam. *Staphylininæ.*

13. Xantholinus, *Dahl.*, *Steph.*

X. fulgidus, *Fabr.*, *Steph.* Very rare; along the sides of a ditch at Grange.

X. glabratus, *Grav.*, *Steph.* Under dry shards and stones in stubble fields; very common.

X. tricolor, *Fabr.*, *Steph.* Along roadsides, in the sun; scarce.

X. linearis, *Oliv.*, *Steph.* Under stones in fields; abundant.

14. Leptacinus, *Erich.*

L. parumpunctatus, *Gyll.*, (Xantholinus), *Steph.* Under *débris* in dry ditches.

15. Staphylinus, *Linn.* Creophilus, *Kirby*, *Steph.*

S. maxillosus, *Linn.*, *Steph.*, (Trichoderma, *Steph.*) Very abundant; in carcases, and in dead fish and cuttle along the coast.

S. nebulosus, *Fabr.*, *Steph.* Rare; in cow-dung.

S. murinus, *Linn.*, *Steph.*, (Staphylinus, *Steph.*) Abundant.

S. erythropterus, ***Linn.*** S. castanopterus, ***Steph.*** Common; alighting in the sun, and in carcases.

S. stercorarius, ***Oliv.***, ***Steph.*** Along roadsides, in the sun; frequent.

S. fulvipes, ***Scop.*** Under stones and clods in a damp ditch at Grange.

16. Ocypus, ***Kirby.*** Goërius, ***Leach***, ***Steph.***

O. olens, ***Fabr.***, ***Steph.*** Under logs and *débris*, and in carcases; abundant.

O. similis, ***Fabr.*** Along roadsides, and under stones and old logs; common.

O. cupreus, ***Rossi.*** Staphylinus æneicollis, ***Steph.*** Under stones on commons and waste places.

O. compressus, ***Marsh.***, ***Steph.*** Under logs and stones.

17 Philonthus, ***Leach***, ***Steph.***

P. laminatus, ***Creutz***, ***Steph.*** In dung; occasional.

P. carbonarius, ***Gyll.*** Not common.

P. æneus, ***Rossi***, ***Steph.*** In dung; not unfrequent.

P. politus, ***Fabr.*** Very abundant; flies in the sun, alighting on roads and paths; also in dead animals.

P. marginatus, ***Fabr.***, ***Steph.*** In carcases; frequent.

P. varius, ***Gyll.***, ***Steph.***, (Cafius, ***Leach***, ***Steph.***) In rotting vegetable matter.

P. xantholoma, ***Grav.***, ***Steph.*** Near the sea-shore; occasional.

P. Fucicola, ***Leach***, ***Steph.***, (Bisnius), ***Leach***, ***Steph.*** Solitary and rare; on a white sandy beach below high-water mark near Lump's Fort, Southsea.

P. fimetarius, ***Grav.***, ***Steph.*** P. lucidus, ***Steph.*** In dead animals.

P. ebeninus, ***Erich.*** Not common.

P. bipustulatus, ***Panz.***, ***Steph.*** In dead animals.

P. varians, ***Payk.*** P. lituratus, P. aciculatus, P. bimaculatus, P. punctiventris, P. obscuripennis, P. longicornis, P. intaminatus, P. agilis, ***Steph.*** Under refuse on roadsides.

P. discoideus, ***Grav.***, (Quedius), ***Steph.*** In vegetable refuse.

P. quisquilius, ***Gyll.*** In rotting vegetable matter.

P. fulvipes, ***Fabr.*** P. coruscus, P. rubripennis, ***Steph.*** At roots of grass in damp places. Rare.

18. Quedius, ***Leach***, ***Steph.***

Q. cruentus, ***Oliv.*** Occasional.

Q. impressus, *Panz.*, *Steph.* In dead animals.

Q. molochinus, *Grav.* Q. picipennis, *Steph.* Not common; under stones and shards, Salterns, Island of Portsea.

Q. frontalis, *Nordm.* Q. tristis, *Steph.* In dead animals; plentiful.

Q. picipes, *Mannh.*, *Steph.* Occasional.

Q. umbrinus, *Erich.* Not common.

Q. boops, *Grav.*, (Raphirus), *Steph.* In dead animals; frequent.

19. Oxyporus, *Fabr.*, *Steph.*

O. rufus, *Linn.*, *Steph.* A single specimen taken in the grounds of Haslar Hospital, by Mr. C. Barron.

20. Lathrobium, *Grav.*, *Steph.*

L. brunnipes, *Fabr.*, *Steph.* Under *débris* and loose soil in damp ditches; rather abundant.

L. elongatum, *Linn.*, *Steph.* L. atriceps, *Steph.* Under stones in moist places.

L. fulvipenne, *Grav.*, *Steph.* Under stones in moist places.

L. multipunctum, *Grav.* L. multipunctatum, L. punctatostriatum, *Steph.* In moss.

L. quadratum, *Payk.*, *Steph.* Under stones in damp situations.

L. terminatum, *Grav.*, *Steph.* Under stones in damp situations.

4. Sub-fam. *Steninæ.*

21. Lithocharis, *Erich.* Sunius, *Steph.*

L. melanocephala, *Fabr.*, *Steph.* In field-paths, under damp leaves and stalks.

L. ochracea, *Grav.*, *Steph.* L. rubricollis, *Steph.* At roots of grass in sandy situations.

22. Stilicus, *Latr.*

S. affinis, *Erich.* In field-paths, under *débris;* rather common.

23. Sunius, *Leach.* Astenus, *Steph.*

S. angustatus, *Payk.*, *Steph.* Occasional.

24. Pæderus, *Fabr.*, *Steph.*

P. riparius, *Linn.*, *Steph.* Abundant; along banks and in moist ditches.

25. Stenus, *Latr.*, *Steph.*

S. bimaculatus, *Gyll.*, *Steph.* At roots of grass in damp places.

S. Juno, *Fabr.*, *Steph.* In meadows, by sweeping, and in moss.

S. buphthalmus, *Grav.*, *Steph.* In moss.

S. Speculator, *Erich.* S. boops, S. nigricornis, *Steph.* In meadows, by sweeping.

S. nigritulus, *Gyll.* S. unicolor, *Steph.* In hedges, by sweeping.

S. binotatus, *Ljungh.* S. lævior, *Steph.* In hedges, and off aquatic plants, by sweeping.

S. rusticus, *Erich.* S. picipes, *Steph.* In grassy places.

S. impressus, *Germ.* S. acris, *Steph.* In grassy spots, by sweeping.

S. tarsalis, *Ljungh.*, *Steph.* S. nigriclavis, *Steph.* In moss.

5. Sub-fam. *Oxytelinæ.*

26. Platystethus, *Mann.*, *Steph.*

P. morsitans, *Payk.*, *Steph.* In horse-dung; rather common.

P. cornutus, *Grav.*, *Steph.* In horse-dung; less frequent.

27. Oxytelus, *Grav.*, *Steph.*

O. rugosus, *Fabr.*, *Steph.* O. carinatus, O. pulcher, *Steph.* In horse-dung.

O. insecatus, *Grav.* In dung.

O. sculpturatus, *Grav.*, *Steph.* In dung.

O. inustus, *Grav.* In dung.

O. nitens, *Marsh.*, *Steph.* O. luteipennis, *Erich.* In dung.

28. Prognatha, *Latr.* Siagonium, *Kirby*, *Steph.*

P. quadricornis, *Kirby*, *Steph.* Under damp bark of dead elms in Anne's Hill Lane; rare.

6. Sub-fam. *Omaliinæ.*

29. Olophrum, *Erich.*, *Steph.*

O. piceum, *Gyll.*, *Steph.* In moss; rare.

30. Omalium, *Grav.*, *Steph.*

O. rivulare, *Grav.*, *Steph.* O. fuscum, *Steph.* In dead crabs and moles.

O. florale, *Payk.*, *Steph.* In dead crabs and fish.

31. Anthobium, *Leach*, *Steph.*

A. triviale, *Erich.* Occasional.

A. ophthalmicum, *Payk.*, *Steph.* On tops of Apiaceæ.

32. Proteinus, *Latr.*
P. brevicollis, *Erich.* In dead snails.

HELOCERA.

1. Fam. Histridæ, *Leach.*

1. Hister, *Linn.*, *Steph.*

H. quadrimaculatus, *Linn.*, *Steph.* On sandy heaths, and along roadsides near the sea; tolerably common.

H. unicolor, *Linn.*, *Steph.* Very common; under carcases.

H. cadaverinus, *Ent. H.*, *Steph.* Common; in dead animals.

H. merdarius, *Ent. H.*, *Steph.* Rare.

H. carbonarius, *Ent. H.*, *Steph* In dead animals; common.

H. purpurascens, *Payk.*, *Steph.* Not common; in horse-dung.

H. stercorarius, *Ent. H.*, *Steph.* Occasional; in carcases.

H. bimaculatus, *Linn.*, *Steph.* Not frequent; in cow-dung.

H. duodecim-striatus, *Payk.*, *Steph.* Occasional; in dung.

2. Saprinus, *Erich.*, *Steph.*

S. nitidulus, *Fabr.*, *Steph.* In excrement; common.

S. æneus, *Fabr.*, *Steph.* Under carcases; not common.

S. virescens, *Payk.*, *Steph.* Rare; in dead animals and in dung.

2. Fam. Phalacridæ, *Schaum.*

1. Phalacrus, *Payk.*, *Steph.*

P. coruscus, *Payk.*, *Steph.* On flowers and under bark.

P. Caricis, *Sturm.*, *Steph.* O. ovatus, *Steph.* On species of Carex; not abundant.

2. Olibrus, *Erich.* Phalacrus, *Steph.*

O. æneus, *Ill.*, *Steph.* O. ovatus, *Steph.* On flowers; common.

O. geminus, *Ill.*, *Steph.* On flowers; common.

3. Fam. Nitidulidæ, *MacLeay.*

1. Cercus, *Latr.* Cateretes, *Steph.*

C. pedicularius, *Linn.*, *Steph.* Anisocerus Spirææ, *Steph.* On leaves of Spiræa ulmaria; frequent.

C. bipustulatus, *Payk.*, *Steph.* On aquatic plants in ditches.

2. Brachypterus, *Kug.* Cateretes, *Steph.*

B. cinereus, *Heer.* On flowers; frequent.

B. pubescens, *Erich.* On flowers; not uncommon.

B. Urticæ, *Fabr.*, *Steph.* On flowers; common.

3. Carpophilus, *Leach*, *Steph.*

C. hemipterus, *Linn.*, *Steph.* Rare; in coffee. Introduced.

4. Epuræa, *Erich.* Nitidula, *Steph.*

E. melina, *Erich.* Under bark; not common.

E. obsoleta, *Fabr.*, *Steph.* Under bark; common.

E. pusilla, *Ill.*, *Steph.* Under bark; common.

5. Nitidula, *Fabr.*, *Steph.*

N. bipustulata, *Fabr.*, *Steph.* In bones; occasional.

N. rufipes, *Linn.*, *Steph.* N. obscura, *Germ.*, *Fabr.* In bones; occasional.

6. Soronia, *Erich.* Nitidula, *Steph.*

S. grisea, *Linn.*, *Steph.* Under loose bark of willows; not uncommon.

7. Omosita, *Erich.* Nitidula, *Steph.*

O. Colon, *Linn.*, *Steph.* In old rabbit-skins; occasional.

O. discoidea, *Fabr.*, *Steph.* In bones; not rare.

8. Pria, *Kirby.* Meligethes, *Steph.*

P. Dulcamaræ, *Ill.*, *Steph.* On flowers; occasional.

9. Meligethes, *Kirby*, *Steph.*

M. rufipes, *Gyll.*, *Steph.* M. flavimanus, *Steph.* On bramble-blossoms; abundant.

M. æneus, *Fabr.*, *Steph.* On flowers; common.

M. viridescens, *Fabr.*, *Steph* On flowers; common.

M. nigrinus, *Marsh.*, *Steph.* On flowers; common.

10. Pocadius, *Erich.* Strongylus, *Steph.*

P. ferrugineus, *Fabr.*, *Steph.* In puff-balls commencing to decay, in September, at Grange.

11. Rhizophagus, *Herbst*, *Steph.*

A. ferrugineus, *Panz.*, *Steph.* In moss; rare.

12. Trogosita, *Oliv.*, *Steph.*

T. mauritanica, *Linn.*, *Steph.* In cases which had been lying in Southampton docks. Introduced.

4. Fam. COLYDIIDÆ, *Schaum.*

1. Xylotrogus, *Steph.*

X. brunneus, *Steph.* Lyctus parasiticus, *Steph.* L. brunneus, *Wollast.* Captured, at different times, breeding in wood at Haslar, by Mr. C. Barron.

5. Fam. CUCUJIDÆ, *Westw.*

1. Sylvanus, *Latr.*, *Steph.*

S. frumentarius, *Fabr.* S. surinamensis, *Steph.* In coffee and sugar. Introduced.

S. bidentatus, *Fabr.* S. dentatus, *Steph.* In sugar. Introduced.

S. similis, *Erich.* In sugar. Introduced.

6. Fam. CRYPTOPHAGIDÆ, *Schaum.*

1. Antherophagus, *Latr.*, *Steph.*

A. silaceus, *Herbst*, *Steph.* Occasional.

A. pallens, *Oliv.*, *Steph.* Not frequent.

2. Cryptophagus, *Herbst.*, *Steph.*

C. Lycoperdi, *Fabr.*, *Steph.* Occasional; in Fungi.

3. Paramecosoma, *Curt.*

P. Abietis, *Payk.* Cryptophagus, *Steph.* Not unfrequent.

4. Atomaria, *Steph.*

A. fuscata, *Schk.* Occasional.

A. nigriceps, *Erich.* Occasional.

5. Ephistemus, *Westw.*, *Steph.*

E. globosus, *Waltl.* Not common.

7. Fam. MYCETOPHAGIDÆ, *Westw.*

1. Litargus, *Erich.*

L. bifasciatus, *Fabr.* Rare.

2. Typhæa, *Kirby*, *Steph.*

T. fumata, *Linn.*, *Steph.* Occasional.

8. Fam. DERMESTIDÆ, *Leach.*

1. Dermestes, *Linn.*, *Steph.*

D. vulpinus, *Fabr.*, *Steph.* In carcases, sea-shore; rare.

D. murinus, *Linn.*, *Steph.* In dead moles; common.
D. lardarius, *Linn.*, *Steph.* Occasional; in houses, in bacon.

2. Attagenus, *Latr.*, *Steph.*
A. Pellio, *Linn.*, *Steph.* In hedges; not common.
A. Verbasci, *Linn.* Rather rare.

3. Anthrenus, *Geoff.*
A. varius, *Fabr.* A. Verbasci, *Steph.* Not common.
A. musæorum, *Linn.*, *Steph.* A. varius, *Steph.* In skins; rare.

9. Fam. BYRRHIDÆ, *Leach.*

1. Byrrhus, *Linn.*, *Steph.*
B. pilula, *Linn.*, *Steph.* Roads and pathways; common.
B. fasciatus, *Linn.*, *Steph.* Roads and pathways; rather abundant.
B. dorsalis, *Fabr.*, *Steph.* Not uncommon.

2. Cytilus, *Erich.* Byrrhus, *Steph.*
C. varius, *Fabr.* C. sericeus, *Steph.* Occasional.

3. Simplocaria, *Marsh.*, *Steph.*
S. semistriata, *Fabr.*, *Steph.* S. picipes, *Steph.* Not common.

WM. BALFOUR BAIKIE.

Brunswick Cottage, Forton, Gosport,
February 27, 1857.

Notes of an Entomological Excursion from Birmingham to Sutherlandshire.—In June, 1842, I sailed from Liverpool to Greenock, and proceeded by the Caledonian Canal to Fort William, intending to ascend Ben Nevis: on the ascent I found abundance of Helobia Marshallana and H. nivalis, and two specimens of the rare and beautiful Leistus montanus. Leaving Fort William, I passed on to Loch Ness, the steam packet waiting to allow the passengers time to go and see the famous Fall of Foyers: this is a locality which seems to promise good collecting, as it abounds in flowers, woods and vales. From Inverness I proceeded by coach to Dingwall, in Ross-shire, where I stopped for the purpose of ascending the lofty Ben Wivis: on the ascent I came to a flat moor, about two miles wide, and from thence the mountain was very steep to the summit: I began searching for insects: I found four specimens of Patrobus alpinus, a species that occurs sparingly on all the mountains of Scotland which I had an opportunity of visiting, but not one could I find on the lower hills or in the glens. At Lairg I found about thirty specimens of Helobia impressa; in Stephens' 'Manual,' p. 17, there is a very accurate description of this distinct beetle: the thorax differs very much from that of all other species of the genus: it is an extremely local insect: I searched for it afterwards in vain, never finding a single specimen, except in that one locality. I travelled on to Inver, on the west coast of Sutherlandshire, and there captured some fine specimens of Plusia interrogationis, Charissa obfuscaria, Coremia munitaria and Crambus ericitellus, of which I had never before seen a specimen. I then travelled across the county to Golspie, to try the park belonging to his Grace the Duke of Sutherland, and as the head keeper delighted in the science of Ornithology as well as myself, I found no difficulty in obtaining liberty to entomologize in the park; here I took more specimens of Plusia interrogationis, Thera variaria and Eubolia mensuraria: I captured a good number of the ordinary marked specimens, and also some varieties almost black. I then returned to Tain, and near Dornock Firth I secured eight specimens of Xylophasia polyodon, of the beautiful black variety so much prized by our collectors; they were accompanied by others of the usual colouring: in one locality I have captured dark, light and intermediate varieties of Aplecta occulta, Hadena adusta, Calocampa vetusta, and other species. Several theories have been suggested to account for this remarkable variation; one of these is that the Scottish soil contains much iron, which has been supposed to be the cause of the darkness of some of the specimens; but let us examine two or three species, to see how that theory stands; first, Cabera pusaria and some other delicate waves, then Mesoleuca albicillaria and M. rubiginaria; the white portions of their wings are equally as white as in the same species found in England, so that the supposed iron soil does not affect them; neither can we prove that altitude makes the differences in question, which must still remain an enigma that requires solution. Returning from Ross-shire along the Caledonian Canal, I landed at Fort Augustus, on the 1st of August: I ascended a high mountain, and captured Olisthopus rotundatus, Omoseus Bulwerii, O. Orinomum and Steropus Æthiops, and on the base of the mountain fine dark specimens of Erebia blandina in abundance. I travelled onward along the canal towards Greenock, and passed on to the Isle of Arran, in hopes of obtaining Erebia Ligea: I had seen two specimens of this insect in the cabinet of the late Mr. Stephens, which were captured by the late Sir Patrick Walker, on the moors at the back of Brodick Castle, when out one day grouse shooting: I was informed by Mr. Stephens that he received that statement from Sir Patrick himself: I have tried that locality three different seasons without finding the insect, still I do not despair. I found E. blandina in profusion, but browner in colour than those taken in the Black Forest, Perthshire: the greater or lesser heat of the sun may perhaps have a powerful influence on the food-plant of those larvæ that produce extraordinary varieties amongst butterflies and moths. I ascended to the top of Goat Fell in a fog, and when this cleared off I captured several specimens of Coccyx finitimana and Pamplusia alticolana: at the base I captured the first Oporabia filigrammaria; I sent specimens to my entomological friends three times over, always receiving them back as varieties of dilutata: I was convinced they were not dilutata, and I sent them to the late Mr. Stephens, who returned them with the name of Oporabia polata, which name they retained some years. I afterwards captured Electra popularia, the first I had seen, and on the ragwort I found a specimen of Graphiphora Dahlii, the richest coloured specimen that I have ever seen: I also obtained the pupæ of Dianthecia conspersa by digging along shore.—*Richard Weaver; 25, Pershore Street, Birmingham, February* 21, 1857.

Occurrence of the Rosy Feather-star (Comatula rosacea) *in Weymouth Bay.*—I have now, in one of my tanks, alive, and at present doing well, a specimen of the above interesting animal: I obtained it on the 19th inst. in Weymouth Bay. This is the third individual I have obtained, and I have heard of another: it appears to possess greater powers of locomotion than do many other genera, due to the greater amount of flexibility in its rays: it is very sluggish, but also very sensitive to the touch. It is useless to give a description, as, if correctly given, it would be identical with that already published by the late Professor Forbes, in his 'British Star-fishes.'—*William Thompson; Weymouth, February* 22, 1857.

Enquiry respecting the Preservation of the Echinidæ.—The species of Echini preserved dry are extremely deciduous; in fact, it is almost an impossibility to keep them perfect,—the slightest damp, and off they fall, of their own accord, and, on the other hand, if kept too dry, the slightest touch breaks them off. Can any reader of the 'Zoologist' tell me how to prevent this? It is very annoying to see good specimens falling to pieces, without knowing how to prevent it. The genera Echinocyamus, Spatangus, and Amphidotus may easily be preserved if a little care is used, but all my attempts to get good specimens of Echinus Sphæra, miliaris and lividus have been in vain, nor have I ever seen any preserved in their natural beauty.—*Alfred Merle Norman; Kibworth, February* 3, 1857.

Proceedings of Natural-History Collectors in Foreign Countries.

Mr. H. W. Bates.—"Ega, July 28, 1856. I now send you another collection from this district, and hope it will be considered a fine one, for I believe there is not any number of any species that I have sent sufficient of before, and some species I send series of, which I hope will be new in London, such as the Allorhina, &c., in the Coleoptera, &c., the Zeonia and an Epicalia in the Lepidoptera. I am sorry I can get no better boxes here to put them in, and I feel very nervous as to the safety of this collection; I have put them up, however, as securely as I can: I filled up one of the boxes with a few Dynastes and birds, and hope to hear that they have arrived safe. Your letter of the 7th of February I received on the 5th of May. It will be very difficult to stay sufficient time to get a good collection at any place above Ega; in some villages existence is scarcely endurable to Europeans, on account of incessant clouds of mosquitos, difficulty of getting anything to eat, and bad feeling of the few inhabitants. Ega is the last place where there are any conveniences for working comfortably: it would be very easy to travel on right through to Quito or Lima, but to stay at a place two or three months is a real difficulty; however, I shall probably try St. Paul's for a few months, as soon as I can hear of a canoe to take my luggage (including provisions for three months), as it cannot be taken by steamer. I received the parcel of books you sent, together with my brother's, in January. In the present collection there are 158 specimens of Micro-Lepidoptera, collected without giving any close attention to them, and whilst hunting for birds with a double-barrel gun slung at my left shoulder; to do much in them I must know something about them: there need not be any doubt amongst our friends that Micro-Lepidoptera are very numerous in this country,—in fact, there must be several thousand species of Tineina and Tortricina, to judge from the proportion of species to the butterflies that I see in a day's ramble; the Amazonian butterflies known must number now thirteen or fourteen hundred: now Mr. Stainton may calculate,—from the proportion known in England between Micros and English butterflies find the correspondent number to the known number of Amazonian butterflies,—but to collect them perfect is extremely difficult, and probably will not be thought worth while. I am sorry I have no better specimens yet to send of the pale Morpho and the Agrias; the Morpho was rather abundant in April, but rarely descended from its height of twenty feet; there is another species that I expect is the same as I sent *one* of from Parà, *viz.* M. Adonis, which never descended from that elevation; the female of this latter I saw also,—it is orange; the female of the present blue one is a pale lavender colour, and apparently variegated with still paler colours, but I have found it impossible to capture it,—in fact, have only seen two individuals; there is yet a third species of these Morphos, which I have never captured: of the Agrias sent I have seen only five specimens, but have now captured another, very much more beautiful than this one, something like the A. Anydon of Hewitson, but much more crimson in fore wings, and hind wings all blue, beneath much more variegated: I have seen three individuals altogether of this. The Zeonia sent I found a brood of: it must be noted that the pupa-skins sent are bound by a silken thread across the body, as I see it breaks, from extreme fineness, on the leaf contracting. There are two pairs on card of the worker of a new form of ant for Mr. Smith's consideration; I have the winged female of a different species; they are all extremely rare; the neuration of the female is unlike any Myrmicidæ or Scoliidæ I have seen. If I do not find another winged female or male by next collection, I will send a sketch to Mr. Smith: I consider it a very remarkable discovery. I am very glad indeed to hear that the second part of White's 'Catalogue of Longicorns' is on the road to me. Please look out for all cheap books which would be useful to me: is not the concluding volume of Boheman's 'Cassidæ' out yet?

"Ega, September 26. I was ready to go up river by the steamer; but it was so full and the time so short, I was disappointed: I go in the next. I have had three months' excellent collecting: to give you an idea of the quality, there are five species of Prionidæ new to me, and I think four new to Science. I saw M. De Gand: he spent two months at Tabatinga, and then descended to Parà, and I have heard nothing more of him; he complained much of his sufferings: it is a terrible hard country up river; he complained of scarcity of insects,—showed me all his captures; some dozen good things new to me, *viz.* a Cicindela (fine), a Pelidnota, a Macraspis, a Batonota, some fine Erotyle, &c. Mr. Hauxwell has been with me again; I think he will do nothing more in birds, which is a pity, as no one has the tact with Indians that he has; he could get several faithful hunters, whilst none of the rest of us can get one, and in birds little can be done without them: the bad price given for his fine collection of river Ucayali is the cause.

"H. W. Bates."

Mr. Alfred R. Wallace.—"Macassar, September 27, 1856. At length I am in Celebes! I have been here about three weeks, and as yet have not done much, except explored the nakedness of the land,—and it is indeed naked,—I have never seen a more uninteresting country than the neighbourhood of Macassar: for miles around there is nothing but flat land, which, for half the year, is covered with water, and the other half is an expanse of baked mud (its present state), with scarcely an apology for vegetation; scattered about it are numerous villages, which, from their being imbedded in fruit trees, have the appearance of woods and forests, but which, in fact, are little more productive to the insect collector than the paddy-fields themselves. Insects, in fact, in all this district there are absolutely none. I have got a bamboo-house near one of these villages, about two miles from the town, which does very well for my head-quarters: to get into the country is difficult, as it belongs to native princes, and there is no accommodation whatever for Europeans: there is, however, a patch or two of forest about six or eight miles off, and to it I have made several excursions, and got some birds and butterflies, but no beetles, which, at this season, seem altogether absent. I cannot help comparing the facilities of the collector on the Amazon with the difficulties here: whether at Parà, Santarem, Barra, Obidos or Ega, or any other town or village, you may always find good forest collecting-ground within a few minutes' or half-an-hour's walk of the place,—you can live in the town, and collect in the country round. In no place in the East that I have yet seen can this be done: miles of cultivated ground absolutely barren for the naturalist extend round every town and village, and to get into the country with any amount of necessary luggage is most difficult and expensive: then, too, the necessaries of life, have all to be brought from the town, which renders living very dear; the only way of moving is by means of porters or small carriages, the cost of which is about ten times that of boat hire, and in many cases you must expose yourself to the risk of life and property, being beyond the sphere of any civilized government. However, I hope soon to make arrangements for a small house near the forest I have spoken of, where I can stay a week at a time, and then bring home and store my collections at my house near Macassar: already I can see that I shall get a pretty good collection of birds. Raptorial birds are abundant (the first place I have seen them so in the Archipelago); I have already seven species, one or two of which I have no doubt are new: of the forty species of birds I have already collected none are handsome, but several, I think, are new, among them a Cinnyris and a pigeon; the rare parrot, Prionitus platurus, is not uncommon here, though I have obtained as yet only one specimen. Among my few butterflies are two Pieridæ, handsome and quite new, and two or three Danaidæ which I do not remember to have seen: I have as yet got no Papilios, but do not despair of soon obtaining some fine ones. The place where I hope to do best is Bontyne, about sixty miles from here: there is a road or path overland, but it would be very difficult to take all the luggage I require by that route, and by the sea, at the present time, owing to the wind being contrary, often takes from a fortnight to a month. In about January, however, the wind will be fair, and the trip is then only twenty-four hours, when I shall probably go there, as I am informed there is plenty of forest, and the highest mountains in the island are close by.

"The people here have some peculiar practices. 'Amok,' or, as we say, 'running a-muck,' is common here; there was one last week: a debt of a few dollars was claimed by a man of one who could not pay it, so he murdered his creditor, and then, knowing he would be found out and punished, he 'run a-muck,' killed four persons and wounded four more, and died what the natives consider an honourable death! A friend here, seeing I had my mattrass on the floor of a bamboo-house, which is open beneath, told me it was very dangerous, as there were many bad people about, who might come at night and push their spears up through me from below, so he kindly lent me a sofa to sleep on, which, however, I never used, as it is too hot in this country.

"ALFRED R. WALLACE."

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To Entomologists, Authors, and Lovers of Natural History.

MR. JAMES FOXCROFT, the well-known and experienced Collector, begs to return his sincere thanks to the Trustees of the British Museum, the Nobility and Gentry, and also particularly to the Members of the Entomological Society, for the patronage he has received for a number of years as a Collector of British Lepidoptera and Coleoptera. He begs to state that he intends to visit SIERRA LEONE and the RIVER GAMBIA, leaving this country in November, 1857 (this will be after he returns from his Summer's Collecting in Scotland this year), and that he will remain in Africa during one, two or three Seasons, according to the encouragement he may receive. He will devote the whole of his time to searching for and collecting Insects of all Orders. In order to enable him to meet the expense attending this journey, he is desirous of obtaining a limited number of Subscribers, at £5 per annum, for one year's collecting of either Lepidoptera or Coleoptera; for two season's Subscription £10 for each order; and for the three seasons, £15 for each Order. The money subscribed is to be paid to Mr. Samuel Stevens, 24, Bloomsbury Street, London, as early as convenient, as Mr. Foxcroft wishes to know how many Subscribers he can obtain before leaving England, in order that he may provide a sufficient number of boxes to contain each Subscriber's share separately, it being his intention, if he stops more than one season, to share the whole of the Insects annually. Each box will be sealed, directed with the Subscriber's name and address, and enclosed in one large packing-case addressed to Mr. Samuel Stevens. Any Subscriber not feeling satisfied with what Insects he gets the first year for his Subscription may withdraw his name, as Mr. Foxcroft's intention is only to take the first year's Subscription before starting, but will take names for the three years. All packing-cases or boxes that the insects are sent in are to be returned to Mrs. Foxcroft. Any person wishing for further information can obtain it upon application to Mrs. Foxcroft at 3, Union Yard, Oxford Street, near Orchard Street, London, West District.

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MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, early in the month of May (and not in April, as previously advertised), a COLLECTION of RARE EGGS, sent from Lapland by J. Wolley, Esq., in 1856. The Collection includes Three undoubted Eggs of Bombycilla Garrula, besides Eggs of *Pyrrhula Enucleator*, Garrulus Infaustus, and many specimens of *Totani*, *Tringa* and *Anatidæ*. Catalogues may shortly be had at the Auction Room, or by applying to Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.

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